A Lecture
ON
ATHEROMA AND SOME OF ITS CONSEQUENCES, WITH THEIR TREATMENT.

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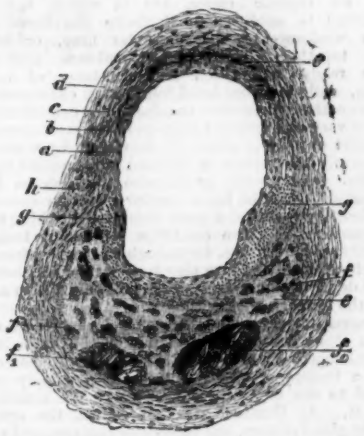
MR. PRESIDENT AND GENTLEMEN,—When I was asked to address this society I was told that a subject of practical interest would be best appreciated, and I have accordingly chosen one which is not only of interest to us as medical men, but either is now or will be by-and-by of interest to us personally, for if we live long enough few of us are likely to escape atheroma and its consequences. It is a trite proverb that "the strength of a chain is that of its weakest link," and the same idea has been applied to man in the saying that "a man is as old as his vessels." In this phrase we have, in the first place, an acknowledgment that the different parts of a man do not all age at the same rate, but that some grow feeble and old before the rest; and, secondly, that the vessels are especially apt to grow old early, and upon their strength or feebleness the fate of the whole organism hangs. Nor is it only in the relative ageing of the vessels as compared with other tissues that a difference is to be remarked, for it occurs also in different parts of the vascular system. Sometimes it is the aorta which becomes affected, while the smaller arteries remain comparatively free. At other times it is the small arteries which become affected, while the aorta remains healthy. Consequently, the symptoms which result from atheromatous disease of the vascular system may differ much, but there are two great groups which come prominently forward—namely, those in which the symptoms are cardiac and those in which they are cerebral. The cardiac affections are chiefly connected with atheroma of the aorta. The cerebral symptoms, although usually associated with atheroma of the vessels in the brain, may also be due to alterations in the aorta and in the heart itself. The atheromatous process is so common in old age that it is usually regarded as a necessary concomitant of advancing years. It has been compared by Virchow to chronic arthritis of the joints and has been called by him "arteritis deformans," while he calls the joint affection "arthritis deformans." But while a certain amount of atheroma is almost invariably associated with advancing years, the arteries may become atheromatous at an earlier age in consequence of disordered nervous supply or disordered tissue change and elimination. Thus it has been found experimentally by Lewaschew[1] that irritation of nerves leads to changes in the vessels which they supply, the vasa vasorum being at first dilated and afterwards the middle coat becoming displaced by connective tissue, so that the internal coat and adventitia become blended. Clinical observation also shows very strikingly how mental worry affects the vessels and how frequently in elderly people it is followed by vascular changes. Altered nutrition also affects the vessels enormously, and, although atheroma may occur to a very great extent apart from syphilis, yet this disease certainly leads very frequently to endarteritis and vascular degeneration, with weakening of the large vessels or occlusion of the smaller. Endarteritis has also been produced experimentally by lesion of the kidneys, leading to their contraction, and the atheroma which is so frequently found along with contracted kidney may, as I hope to show, be actually dependent to a certain extent on that condition. The process of atheroma is thus described by Ziegler:[2] "The intima is generally the most affected, while the media is often unaltered and the adventitia only slightly infiltrated. In other cases the adventitia may be somewhat thickened and the media atrophied. The change in the intima consists of more or less extensive but generally unilateral thickening. At the points where the altered passes into the unaltered tissue the thickening is made up of fibrous tissue more or less notably infiltrated with leucocytes. The same is true of the innermost layers of the altered intima; but the deeper layers in contact with the elastic bounding membrane consist of pale indistinctly fibrillated tissue, which is devoid of nuclei and almost entirely necrosed; they contain numerous aggregations of granular detritus. The granular masses consist partly of albumin, partly of fat, and older foci of softening nearly always contain tablets of cholesterin. Atheroma thus appears to be essentially a necrosis with granular and fatty disintegration of the thickened intima. The atheromatous ulcer is produced by the advance of the disintegrating process towards the lumen of the vessel and rupture of the innermost layers of the intima. We may conceive how readily such a rupture might occur if we note that on the post-mortem table very slight

FIG. 1.



After Ziegler. Section of an atheromatous cerebral artery. *a*, Intima considerably thickened. *b*, Bounding elastic lamella of intima. *c*, Media. *d*, Adventitia. *e*, Necrosed denucleated tissue with masses of fatty detritus. *f* and *f*, Detritus with cholesterin tablets. *g*, Infiltrated leucocytes in the intima. *h*, Infiltrated leucocytes in the adventitia.

pressure on an atheromatous patch often suffices to break in the surface layer and convert the patch into a cavity." Sometimes the atheromatous patch, either while whole or after undergoing ulceration, may become more or less calcified, and the sharp points of the calcareous plates may not only make their presence evident to the auscultator's ear by giving rise to a sharp whizzing murmur over the aorta, but may lead to the production of fibrinous clots by a process analogous to that of whipping blood after it has been shed. Along with atheroma it may be advisable to take endarteritis obliterans, which is practically atheroma in the smaller vessels, and consists, like it, in a thickening of the internal coat, though possibly with less deposit between the internal and middle coats than what we find in atheroma of the larger arteries. I shall therefore class it along with atheroma and use this term as more convenient when talking both of the affections of the large and of the minute arteries.

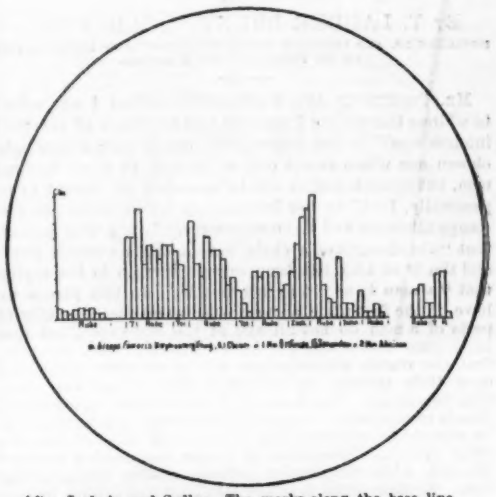
The consequences of atheroma will differ according to the size of the artery affected and the extent and nature of the affection. Atheroma of the aorta may not only weaken the coats of the vessel and give rise to the formation of aneurysm, but may affect both the heart and nerve centres in other ways. Atheromatous thickening close to the aortic orifice will tend to lessen the calibre of the coronary arteries and at the same time render them rigid and unyielding. Should an atheromatous mass undergo softening, so that an ulcer forms in the interior of the aorta, numerous granules will be discharged into the blood and will be carried to various organs and there cause embolic infarcts,[3] arresting more or less completely the circulation in the vessel beyond the part where their course is arrested. Similar consequences may

[1] Virchow's Archiv, vol. xcii., p. 152.
[2] Pathological Anatomy, &c. Translated by Donald Macalister, M.D. Part II., sections i. to viii., p. 71.
[3] Ziegler: Op. cit., p. 73.

arise from atheroma of medium-sized vessels, and when very small vessels are affected their lumen may be completely obstructed by the gradual thickening of their walls, instead of by sudden arrest of the circulation by an infarct. Yet in these vessels, though the circulation has been gradually diminishing, its final arrest may be comparatively rapid, because of the formation of a thrombus at a point where the lumen of the artery has already been diminished. No organ of the body is free from the risk of vascular obstruction, but the two organs in which the symptoms are most marked and important are the heart and the brain, and the symptoms may, therefore, be divided into two great classes of cardiac and mental. All the symptoms may again be subdivided, according to their severity, into functional and organic. The term "functional" is in some respects objectionable, for it is very unlikely that any change in the function of an organ takes place without definite organic change, either physical or chemical, in the organ itself. Yet the term may be employed to indicate those slight alterations in function to which, on account of our imperfect knowledge, we are unable to assign an organic cause, but in which the cardiac disturbance is such as to indicate disordered innervation or weakness of the muscular fibre, or both conditions together. The actual weakness makes itself felt in ready exhaustion and shortness of breath on exertion, while the disordered innervation evidences itself in irregular action, discomfort or a feeling of constriction on the chest, or various degrees of pain up to the most severe. The discomfort or pain is generally increased by exercise, and consequently the patient is induced or compelled to give up the active employments or exercise to which he has been accustomed. Emotion has a similar effect to exercise, and the patient is apt to feel a great dislike to anything that calls for mental strain. The condition he suffers from is undoubtedly a complex one, for though the mental faculties are those which are called into play by emotion, yet the effect of arterial degeneration upon them is probably due to an alteration in the heart as well as the brain.

Whenever any organ is called upon for increased exertion, whether it be a muscle, a gland, or the brain itself, an increased supply of arterial blood appears to be necessary, and in a healthy organism this increased supply is always provided to the organ by dilatation of the arteries which supply it. As Bernard has well shown, the artery of a secreting gland dilates, the capillaries enlarge, and the blood gushes through them into the veins. In a contracting muscle the vessels also dilate, and although the current of blood during the actual contraction may be increased or diminished, yet the vessels of the muscles always dilate, and a full stream of blood passes through it either during the contraction itself or after the contraction is over. (Fig. 2.) A similar dilatation of the bloodvessels of the brain has been shown by Mosso, who found that even such a slight exertion as doing a sum in arithmetic would make itself evident in the circulation of the rest of the body by the withdrawal of blood to the brain in order to maintain its activity. (Fig. 3.) But when the vessels become atheromatous and rigid they can no longer dilate and supply an increased amount of blood to an organ when the necessity for it arises. The first organ to be supplied from the arterial system is the heart itself, and we find that an individual may complain of symptoms known only to himself, and which probably indicate commencing atheroma, when to all appearance he is perfectly sound and when his friends very often say they never saw him looking fitter in his life. It has seemed to me that one of the first signs is that the patients complain that they "have lost their nerve" for all ordinary work. They are perfectly fit for all ordinary occupations or businesses, for they can hunt or shoot, but when any call is made upon them for extraordinary exertion they feel themselves unequal to it. When hunting they no longer like to take a big jump, not that they feel physically unable for it, but they have a sort of indefinite fear of it, or, as they say, they "funk" it. They do not like any business question which involves sudden decision, and they may even go so far as to dislike meeting with strangers and having to talk to them on account of the extra exertion involved. Yet there may be no outward indication of all this, and the patient may be able quite successfully to conceal his feelings from everybody else. It is at present almost impossible to say how much of these feelings are really due to commencing atheroma and rigidity of vessels and how far they may be caused by mere alterations in tissue change, and more especially by the imperfect removal of uric acid and other products of tissue waste and their consequent accumulation in the blood or organs, as mentioned by my friend Dr. Mitchell Bruce in his admirable description of the gouty heart.[4] Nor will it be easy to decide such a question, for the same treatment that would be likely to remove the uric acid and other waste products will be likely to improve the condition of the vessels and to restore the patient, at least for a time, to comparative health. If the coronary arteries are more severely implicated the effect of imperfect nutrition of the

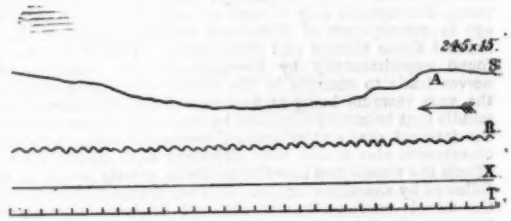
FIG. 2.



After Ludwig and Sadler. The marks along the base line indicate seconds; the height above the base line indicates the amount of blood flowing from the veins of the biceps of a dog during tetanus (Tet) or tet), during rest (Ruhe), or during simple contraction (Zuck).

heart itself will become still more evident, its impulse will tend to become feeble, its sounds indefinite, the pulse feeble irregular, or intermittent, the breath shorter, and the discomfort or pain on exertion more pronounced. There may be ringing in the ears, giddiness, and occasional fits of faintness or complete loss of consciousness. Here, again, it is difficult to assign an exact cause for such nervous symptoms. One is apt to say loosely that they are "due to a little weakness of the circulation," without attempting to formulate definitely

FIG. 3.



To show the contraction of the vessels produced during the process of multiplying 245 by 15. S, Volume of left arm. A marks the point at which the calculation was commenced; after this point the pressure falls. B, Respiratory movement of chest. X, Abscissa. T, Time line; every upright marks an interval of five seconds.

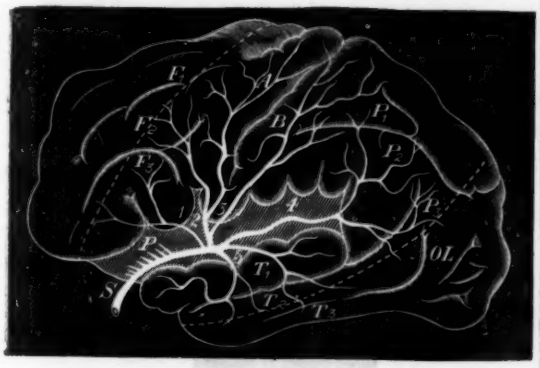
the nature of this weakness. They may possibly be sometimes due to ptomaines or leucomaines, or they may be caused by minute hæmorrhages in the nervous centres from the bursting of capillary aneurysms, but the transitory nature of the symptoms seems to indicate that frequently they are more likely due to minute embolisms than to hæmorrhages.

When we look at the excavated surface of an atheromatous

[4] Practitioner, January, 1895.

ulcer in the aorta we cannot help speculating as to where all the stuff which formerly filled it has gone, and, knowing as we do that embolisms are most likely to find a lodgment in the brain, we can hardly help trying to connect the various slight nervous symptoms which are so frequent in atheroma with the atheroma itself and with minute scattered plugs in the cerebral vessels arising from it. A glance at Fig. 4, which shows the distribution of vessels in the brain,

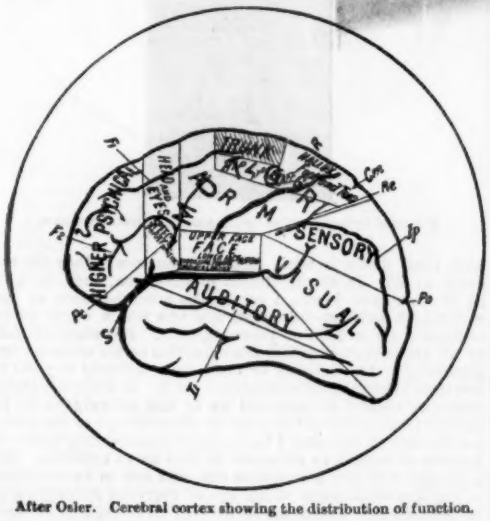
FIG. 4.



After Ross. Distribution of the arteries in the brain.

and Fig. 5, which indicates the distribution of function in the cerebral cortex, will readily show how easily minute particles, by obstructing small vessels in different parts of the brain, may give rise to symptoms of the most various sorts—sensory, motor, and intellectual. The mental symptoms may be very slight indeed, and their presence may only be ascertained when certain things have to be done. Thus, a patient of mine, a strong, very energetic man aged

FIG. 5.



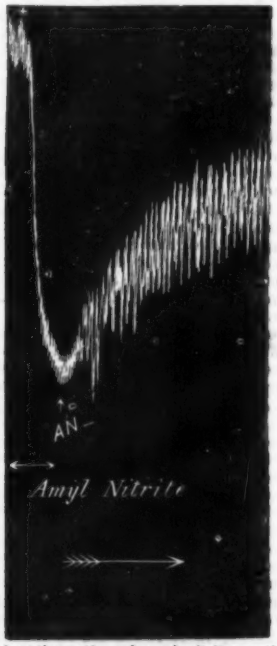
After Osler. Cerebral cortex showing the distribution of function.

sixty-five, had a kind of fainting fit which left him a little stupid for a day or two. On returning to work he was perfectly well in every respect but one. He could conduct all his business, which was a large one, arrange every detail with one exception, for though he could write the correct sums and names on his cheques and sign them perfectly he could not put in the proper figures. Men with atheromatous vessels may go on for a number of years and no accident may befall them, but if the atheroma is well marked I think it is right that both they and their friends should know that the man is rather unsafe, and that he may, without much apparent warning, do a foolish thing. It is in such cases that we hear the story that "Mr. So-and-so lost his money, and this preyed so much upon his mind that he went off his head." If the case had been correctly read it would probably have been that the man had atheromatous disease, leading either to embolism or to hæmorrhage in some part of his brain, which gave rise to no motor symptoms, but so disordered his higher faculties that he committed some folly, in consequence of which he lost his fortune. The process of cerebral degeneration, of which this was the first proof, then went on until it became evident to everyone. It is strongly advisable for men aged sixty and upwards who are engaged in business and have atheromatous arteries to guard themselves against the chance of doing anything foolish, and if they are in partnership the question will arise how far the partner ought to be informed of the possibility of such an occurrence in order to safeguard his own interests as well as the patient's.

In cases of severe affection of the coronary arteries the chief risk is angina pectoris, although it is quite possible that sudden death may occur in such cases without any pain at all, and a patient may go to bed perfectly well and happy and be found dead in the morning. The pain of angina pectoris is in all probability due to weakness of the heart in proportion to the resistance it has to overcome and may be removed either by increasing the power of the heart or lessening the resistance. In most cases it is necessary to lessen the resistance in order to obtain rapid relief. This is effected by dilating the vessels by the aid of nitrite of amyl[5] or other nitrites, such as that of butyl, nitro-glycerine,[6] nitrite of soda, or hydroxylamine.[7] All these have practically the same action in causing dilatation of the arterioles. All these substances act in much the same way and dilate the peripheral arterioles so that they present less resistance to the flow of blood through them. The pressure falls, and the heart, having little resistance in front of it, is able to empty itself easily and thoroughly. This is readily seen from the tracings (Figs. 6 and 7), in which, as the pressure falls, the oscillations due to each beat of the heart become very much more marked than before. The nitrite of amyl (Fig. 6) and nitrite of iso-butyl (Fig. 7) are the quickest to act, and thus they afford relief more quickly than the others; but nitrite of soda appears to have a more prolonged action, and so does nitro-glycerine, which, being on the whole the most convenient, has become more used than any of the others. The last substance that I have tried for the relief of angina pectoris is hydrochlorate of hydroxylamine.[8] (Fig. 8.) It seems to have a more permanent action than any of the others, but it tends to irritate the stomach, and the trials I have made of it have not yet shown it to possess such advantages over the others as are likely to make it displace them, yet at the same time it is a remedy worthy of a wider trial. But all these remedies are merely palliative; they tend to avert a fatal termination, but they do not have much effect upon the vascular condition of the heart and vessels which give rise to the pain. The drug which has hitherto appeared to be most successful, not only in relieving the pain of an aneurysm, but also in averting the occurrence of spasms of angina pectoris, has been iodide of potassium in large doses of from ten to thirty grains three times a day. The beneficial effect of iodide of potassium in cases of cardiac or vascular disease due to atheroma, as well as in rheumatic affections of the joints, affords further confirmation of the likeness which Virchow has pointed out between "arteritis deformans" and "arthritis deformans." But we know only too well that in cases of arthritis deformans, more commonly known under the name of rheumatic gout, iodide of potassium may be administered in large doses until both patient and medical man are sick of the remedy and hopeless of cure. In such cases a visit to Bath, Buxton, Harrogate, or Aix may afford in a short time relief which has been sought for in vain by months of treatment at home. A course of baths, a course of water-drinking, and more especially massage of the joints, clear away the chronic thickening, remove pain, and restore flexibility to the joints. The mere use of an abundance of water as a beverage at home may, if continued for a sufficiently long

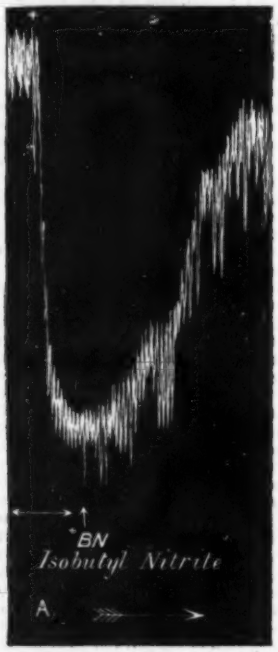
[5] THE LANCET, July 27th, 1867.
[6] St. Bartholomew's Hospital Reports, 1876, p. 144.
[7] Royal Society's Proceedings, 1889, vol. xlv., p. 352.
[8] St. Bartholomew's Hospital Reports, vol. xxx., p. 189.

FIG. 6.



Tracing showing the action of amyl nitrite on the blood pressure. The point where the administration was begun is marked by a cross; the point where it was discontinued by a small arrow. The horizontal double-headed arrow indicates the zero point of pressure; the single-headed arrow indicates the direction in which the tracing is to be read.

FIG. 7.



Tracing showing the action of isobutyl nitrite on the blood pressure. The indications on the tracing are the same as in Fig. 6.

time, prove successful as a remedy. I saw a very instructive case of this a short time ago. A patient suffered from a rheumatic affection of his thumbs which rendered the metacarpo-phalangeal joints quite stiff, so that the thumbs stuck out rigidly from the hand. He went to Buxton, improved somewhat, though not greatly. After his return home he drank a pint of hot water every night and morning steadily. For months no improvement was manifested, but at the end of a year the joints became supple and are now as limber and useful as they ever were in his life. This patient's case, I think, teaches us very strongly the necessity of long-continued treatment and of not giving up in despair because no improvement is manifested even after it has been continued for months.

The kidneys are the natural emunctories of the body, and through them the products of tissue waste ought to be eliminated. But some of these products, such as uric acid and urate of soda, are very sparingly soluble, and if little water be drunk they may remain embedded in the tissues instead of being eliminated. Many patients, and especially those having a gouty tendency, hardly ever touch water pure and simple. They may take a little in the form of soup, tea, or coffee, but their chief drink

FIG. 8.

Action of hydroxylamine hydrochlorate on blood pressure.

with their meals is wine, and between meals they do not drink at all. In the treatment of atheroma, then, as well as of rheumatic joints, I regard the administration of hot water as a most useful agent, and one which ought to be continued for months or years together. But when we look at an atheromatous artery the condition seems quite as unpromising and as unlikely or even more unlikely to yield to treatment than that of a deformed joint. It is quite natural that one should be sceptical as to the advantages to be derived from the use of hot water in either the one or the other, yet the case of the man I have just mentioned may make us hopeful in regard to atheroma as well as to arthritis. His cure was, however, a very slow one, and not to be compared in rapidity with those which are of everyday occurrence at Bath and Aix. There can be little or no doubt that at these places the use of massage in affections of the joints greatly contributes to the rapidity of the cure. Is it possible, then, to exercise anything like massage upon the heart and vessels? Before answering this question it may be well to consider what massage really is. Under the name are included kneading, stroking, and tapping with various degrees of force. The main object of the procedure is to imitate artificially the arrangement which exists naturally in all organs of the body for getting rid of waste products from the organs in which they are produced, and for increasing the supply of fresh

blood to these organs. As Claude Bernard has well put it, all the cells of which our bodies are composed live in a liquid medium—viz., the tissue juice in which they are all bathed. This tissue juice fills up the interstices between the cells. It derives fresh nutriment and oxygen from the blood in the capillaries. These it yields up to the tissues and receives from them in return their waste products, which it sends out partly through the veins and partly through the lymphatics. In some cases the lymph spaces appear to communicate directly with the lymphatics, while in others they appear to communicate only indirectly, no definite opening being visible through which the tissue juice can flow into the lymphatics, but yet it may pass readily into them even although it has to traverse endothelial cells. The effect of alternate pressure on a flow of lymph has been made a special study by Ludwig and his scholars. Muscular exercise, for example, is found greatly to increase the flow of lymph, and the mechanism by which this is effected appears to be the following. Each muscle is surrounded by a strong fascia consisting of two layers. Between each there exists a lymph space. When a muscle is relaxed and elongated its transverse diameter becomes less—or, in other words, it shrinks away from its sheath and thus tends to drag the internal layer away from the outer. (Fig. 9, A.) It thus

FIG. 9.

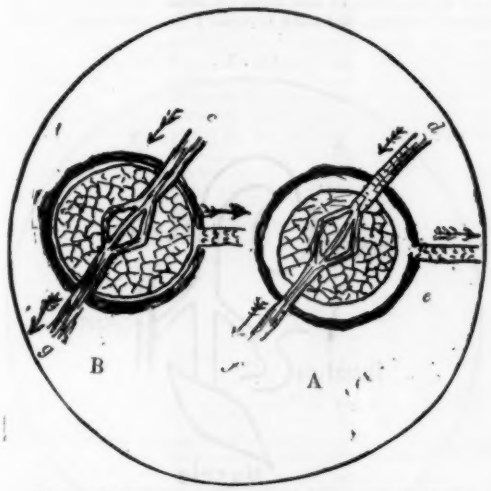


Diagram of transverse section of voluntary muscle to show the pumping action exerted on the muscle, juice and waste products during action. The bloodvessels cross diagonally. To the left (B) the muscle is contracted and presses the two layers of the fascia together so as to drive the muscle juice out into the lymphatics. To the right (A) the muscle is relaxed and tends to draw the layers of fascia apart and suck the juice out of the muscle into the lymph space. *c*, Artery. *d*, Artery. *e*, Lymphatics. *f*, Vein. *g*, Vein.

tends to create a vacuum between the two layers of the fascia, and into this the tissue juice of the muscle is drawn. When a muscle again contracts and shortens it becomes at the same time thicker, and pushes the internal layer of the fascia against the external. (Fig. 9, B.) The fluid is thus driven out of the lymph space onwards into the lymphatics, and its return is prevented by the numerous valves with which these lymphatics are furnished. Each time that a muscle contracts it drives the fluid onwards; each time that it relaxes it sucks its tissue juice and products of waste into the lymph spaces, and thus the more it acts, up to a certain point, the more thoroughly are its waste products eliminated. The result of such action is well seen in an old cab horse on a frosty morning. For the first half-mile or so the poor creature seems as if it could hardly put one foot before the other, then its pace quickens, and after it has gone some distance its legs are supple and its pace is rapid. A similar condition is noticed in muscular rheumatism in man, where the slightest movement causes pain at first; but, after a little exercise, the waste products being pumped out, the muscle recovers its normal condition, the pain is eased, and its function becomes normal. At the same time that the action of the muscle thus pumps away its waste products, provision is made for a fresh supply of nutriment, and as the muscle contracts its arteries dilate and a free flow of blood occurs through them. Sometimes the mechanical obstruction presented to the flow of blood by the contracting muscle may retard the circulation during the actual contraction, but after it is over the circulation through the muscle is greatly increased. (Fig. 2.) In glands the increased flow of blood in itself and the dilatation of the vessels in the gland will tend to press out the lymph, for the gland is almost always enclosed in a firm fibrous capsule.

The peritoneum, pleura, and pericardium are all lymph spaces, and the manner in which fluid is absorbed from the peritoneal cavity by the central tendon of the diaphragm and from the thorax by the costal pleura has been beautifully shown by Ludwig and his scholars, although von Recklinghausen was the first to observe the absorptive power of the diaphragm. The more the diaphragm acts the more quickly is fluid absorbed by it from the peritoneal cavity, and the more the thoracic walls act the more quickly is liquid pumped from the pleural cavity. The mere act of respiration tends to pump out the lymph from the peritoneum and pleura, and thus to maintain perfect nutrition in these important cavities. In the pericardium a pumping action is

FIG. 10.

Diagram of a transverse section of the thorax during inspiration and cardiac systole. It shows the tendency to the formation of a vacuum in the pleural and pericardial cavities.

kept up both by the respiration and by the pulsations of the heart itself. We may understand this more easily if we look at the diagrams of Figs. 10 and 11. In Fig. 10 I have tried to represent the condition of inspiration and cardiac systole. In inspiration the chest walls expand and tend to cause a cavity between the two layers of the pleura. The suction action which they thus exert is evident, not only from the entrance of air into the lung through the normal air passages, but from the way in which air will rush in when any opening has been made into the thorax between the ribs. This suction action is not only exerted upon the lungs, but upon the pericardium, which it tends to withdraw from the heart. If at the same time the heart is contracting it tends to create a cavity in the pericardium, and thus suction is exerted upon the pericardium and upon the heart itself, which will not only tend to draw fluid into the pericardial space, but also fresh tissue juice into the substance of the heart. In Fig. 11 I have tried to represent very diagrammatically the condition during expiration and during cardiac diastole. The chest wall, sinking down upon the distended lung, will tend to press any fluid in the pleural cavity into the lymphatics of the chest wall and will also tend, along with the diastolic expansion of the heart, to press fluid out of the pericardium into its lymphatics, and out of the muscular substance of the heart into its lymphatic

vessels. In this way we can see that the movements of respiration, as well as those of the heart itself, constitute a kind of massage to the lungs, thoracic walls, pericardium, and heart—a fact which was clearly pointed out some years ago by my friend, Professor Hugo Kronecker. Nor is this all,

FIG. 11

Diagram of a transverse section of the chest during expiration and cardiac diastole, showing the pressure of the walls of the pleural and pericardial cavities against each other.

for the walls of the arteries are themselves likewise subject to a kind of massage by the alternate systole and diastole of the heart (Fig. 12), and this fact is of great importance. Between the intima and media, and probably in the media itself, there are lymphatic spaces, and in the adventitia there are distinct lymphatic vessels. Encased, as many of the

FIG. 12.

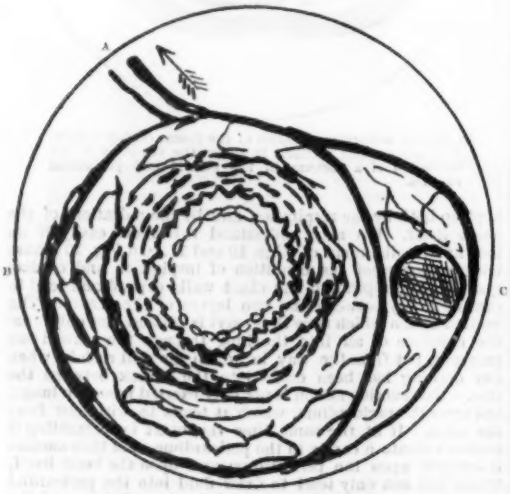


Diagram of artery and nerve in a sheath of connective tissue. A, Lymphatics. B, Sheath. C, Nerve.

arteries are, in a strong fibrous sheath, their alternate distension and relaxation at each pulsation will tend alternately to drive the internal layer against the middle and the middle against the outer, so that any fluid lying between them will be driven onwards into the lymphatics with each systole of the heart, and during the diastole the arterial coats will tend to separate from one another and thus draw in fresh supplies of tissue juice from the vasa vasorum. The mechanism by which the nutrition of the arteries is maintained is thus seen to be very much like that of the muscles. In some animals, instead of there being merely lymph spaces or small lymphatic vessels between the artery and its coat, a regular lymphatic vessel is seen to surround the artery, which forms, as it were, the core of the lymphatic. This condition is seen in the aorta of the tortoise, and it occurs also in the vessels of the brain. Nor is the utility of the massage action exercised by the alternate dilatation and contraction of the artery confined to the nutrition of the artery itself, for not infrequently we find that a nerve trunk—e.g., the vagus—runs along with the artery enclosed in a common sheath of unyielding connective tissue. The contraction and dilatation of the vessel will exert a kind of massage upon the accompanying nerve, similar to its action on the arterial walls, and will thus tend to maintain the nutrition of the nerve as well as of the artery.

It is well known that without exercise we cannot have the muscles in first-rate order, and the same thing is universally acknowledged in regard to the heart. No athlete would think of running a race without previous training—a training which is even more necessary for his circulation and consequent wind and endurance than for the muscles of his limbs. It is obvious that if the respirations be shallow and few, and if the beats of the heart be feeble and imperfect, the thoracic organs, and more especially the heart and arteries,

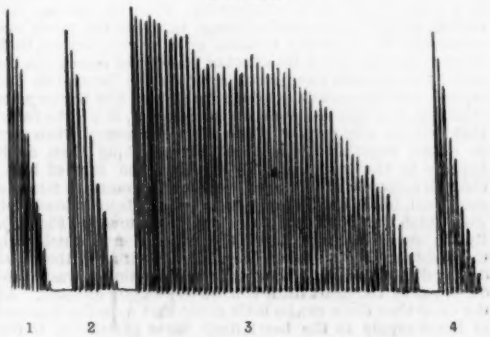
FIG. 13.

Diagram showing the three great areas for the distribution of blood in the body—viz., the muscles, the intestine, and the skin.

will suffer in their nutrition. The removal of waste from them will be less perfect, and they will be liable, not only to the accumulation of such forms of tissue waste as will render them functionally feeble or irritable, but also to the distinct organic changes which we know as atheroma. Feeble action of the heart, although in some respects it may be a safeguard against rupture of weak or brittle arteries, is in itself a distinct evil, as lessening the nutrition both of the organ itself, of the arteries which convey the blood, and of the tissues which they should nourish. How, then, is the nutrition of the heart to be improved and its power increased? As I have already said, if the difference between systole and diastole is great, the removal of waste products will be more perfect, and this difference may be increased by causing the circulation to become more rapid, lessening the resistance in the arteries so that they present no obstruction to the heart's emptying itself, and allowing the blood to pour rapidly through the venous system back into the heart so that it is thoroughly filled during diastole. There are three large systems, or vascular districts as we may term them, in the body. The first is the skin, the second the intestines, and the third the muscles. (Fig. 13.) It is exceedingly curious to note how little

the enormous vascular district of the muscles is taken into account even in recent works on physiology, and how all the variations in blood pressure are referred to contraction of vessels either in the skin or in the intestines. And yet the vessels of the muscles are as important as both the other two taken together. When the vessels of the muscles dilate during exercise they allow the blood to flow rapidly through, but during the muscular contractions the flow may first be interrupted mechanically, and the general blood pressure may rise. (Cf. Fig. 2.) This rise, slight though it may be, is sufficient in some cases of weak heart to produce intense pain and danger, so that a man suffering from angina pectoris is obliged to desist from attempting to walk up even a slight incline. Yet if he can continue the muscular exercise the pain passes off and he gets freedom of action resembling that commonly known as "second wind," a condition which is probably also connected with the circulation through the muscle. In such cases some good results on the circulation may be obtained without any risk by substituting massage of the muscles for actual exercise. My friend Dr. Tunnicliffe and I have made some experiments on the effect of massage on muscles. The effect of massage upon muscle is simply to imitate artificially the process by which waste products are naturally removed from it. Instead of the muscle contracting and driving on its tissue juice containing the waste products into the lymphatics by pressing the inner layer of the fascia against the outer, the muscle is kneaded so as to express its juice, and this is then rubbed onwards into the lymphatics by upward pressure and stroking. The kneading and stroking are the two most efficient movements in massage, but they may be assisted by tapping with more or less force, for this movement appears to excite reflexly an increased circulation both in the skin and in the muscles themselves. By means of these three movements combined the waste products are readily removed from the muscle, while at the same time no fresh ones are produced by renewed muscular contractions, as they are in ordinary exercise. The flow of blood through a muscle is enormously accelerated, and its contractile power correspondingly increased. Even when a muscle has been so much fatigued

FIG. 14.



After Maggiora and Vinaj. Blät. f. Klin.: Hydrotherapie, 1892, p. 6. 1, The fatigue curve of the left hand raising a weight of 3 kilogrammes every two seconds. 2, The fatigue curve of the right hand. 3, The fatigue curve of the left hand after five minutes' massage. 4, That of the right hand without massage.

FIG. 15.

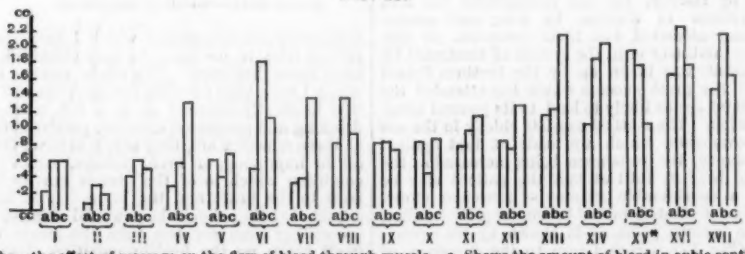
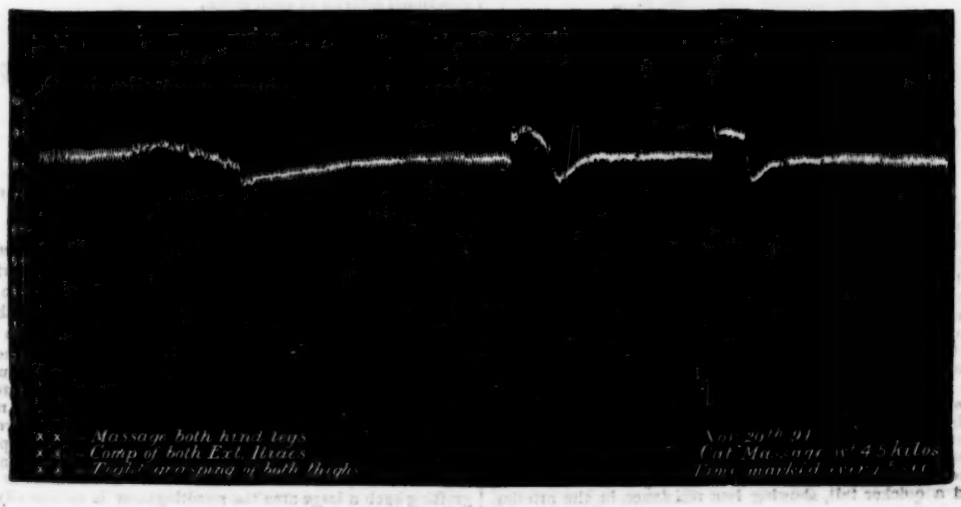


Diagram to show the effect of massage on the flow of blood through muscle. a, Shows the amount of blood in cubic centimetres which flowed from a muscular vein when it was simply opened. b, During massage. c, After massage.

FIG. 16.



Tracing showing the effect of massage on blood pressure.

that it can hardly contract any more its contractile power is restored by massage, as is evident from the tracings (Fig. 14). These are made by bending the finger with a weight attached to it until it is so exhausted as to be unable to contract any more. The movements are recorded by a point upon a blackened cylinder. From the tracings it is evident that a few minutes' massage increases the power and endurance of exhausted muscles up to or even beyond their normal. On comparing the effect of massage of muscles on the circulation through them, as observed by Dr. Tunnicliffe and myself, with the results obtained by Ludwig and Sadler after stimulation of the motor nerves of muscles, it will be found that they are very similar. The effect of massage when seen in actual experiments is even more striking than as it appears in the diagrams. To say that the flow of blood through a muscle is increased threefold by massage means a good deal, but it hardly suggests to one the tremendous gush with which the blood does flow through the muscle (Fig. 15). By the use of massage, then, the circulation is quickened, the resistance is diminished (Fig. 16), the filling of the blood during diastole increased, and thus the pumping of waste products out of the heart itself is more thoroughly effected. At the same time there can be little doubt that a similar increase of blood-supply to the heart itself takes place even if the coronary arteries are contracted; and as it is called upon to make no extra exertion, but, on the contrary, to work against less pressure than before, we may expect it to become better nourished and better able for the work. But simple massage will not increase the thoracic movements, and these, as I have mentioned, are important adjuncts. Therefore it is that, if the patient be strong enough, carefully graduated movements may be added to massage or replace it entirely. For these movements will increase the flow of blood through the muscles and have all the other useful actions I have mentioned as resulting from massage. Massage in the treatment of heart disease is, I believe, first mentioned by Harvey, but its employment was first reduced to a system in Sweden by Ling and others. The Swedish cure attracted but little attention in this country or on the Continent until the system of treatment by baths and movements was taken up by the brothers Schott of Nauheim, and the great success which has attended the use of this method seems likely to lead to its general adoption and recognition. The method consists chiefly in the use of graduated movements, which are made at first against very slight resistance, the resistance being increased as the patient is able to bear it, until at last the patient may be obliged to use a considerable amount of muscular effort. Under this treatment dilated hearts become rapidly smaller, at least up to a certain point, as is shown by the accompanying figure (Fig. 17), which I owe to the kindness of

FIG. 17.

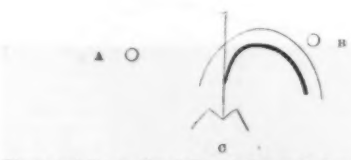
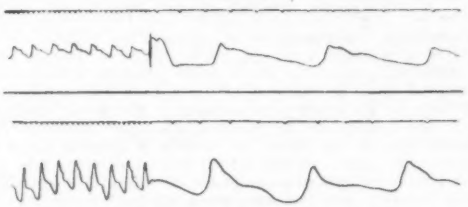


Diagram of the cardiac dulness before and after a bath. A similar effect is produced by gymnastic exercises. The thin line shows the graduated dulness before and the thick one after. A, Nipple. B, Nipple. C, Ensiform cartilage.

Dr. Schott. But it is evident that the alternate expansion and contraction of the arteries may be very slight, and their self-massage, as we may term it, very imperfect if the arterial tension be high, as we often find in gouty patients, even although the heart may be strong. Can anything be done to remedy this condition permanently? I believe it can. I have only begun to use the treatment, and I can only give you at present one example; but from it you will see that a systematic course of exercises has brought about in the case of a gouty man the precise alteration in the pulse for which we would seek—a diminution in the resistance and a more powerful action of the heart (Fig. 18)—so that instead of a pulse tracing with a slow ascent, indicating feebleness of the heart, in proportion to the resistance, and a slow descent, indicating contracted arterioles, we get a rapid and much larger ascent, indicating increased contractile power of the heart, and a quicker fall, showing less resistance in the arteries. Such a case as this makes one hopeful that, unpromising as arteritis deformans is in regard to treatment, we may yet have such power to cure it as we have in the case of arthritis deformans. I should not have ventured to bring before you a plan of treatment based upon one case alone were it not that this, although the only one that I have, is simply one of many that have been recorded. Nor does it seem much to claim for the plan of treatment, for it is a fact that many, perhaps most, people in civilised countries either cannot or will not take enough exercise, or exercise of the right sort, and it is an exceedingly common thing to hear a man's friends remark that if he would take more exercise he would be perfectly well. But a mere walk along the flat cannot be regarded as exercise for many people. It may be all that they are able to take on account of the weakness of their muscles or the flabbiness of their heart, but it is insufficient to produce the cardiac, vascular, and

FIG. 18.



Pulse tracing showing the effect of massage and graduated movements. Each tracing is taken partly with a slow and partly with a quick movement of the sphygmograph. The upper shows high tension and a feeble heart; the lower shows less tension and a stronger heart. These tracings I owe to the kindness of Dr. Gustav Hamel, to whose treatment I had recommended the patient.

respiratory self-massage of which I have spoken, and if the patient tries to do more he may overstrain himself and do more harm than good. The whole essence of the treatment which I have been advising for atheroma and its consequences may be shortly summed up in a few words—namely, water drinking and graduated exercise, passive and active. Simple as these remedies are, they are, I believe, the most potent of all in improving, or even, perhaps, removing completely, a condition which is of the utmost gravity from its relation both to the heart and the brain. It is, indeed, natural to expect that they should be powerful curative agents, for they are neither more nor less than the means by which Nature itself keeps up the healthy nutrition of every organ in the body, where the utmost pains seem to have been expended upon mechanisms whereby not only fresh nutriment should be supplied, but waste products should be removed with greater or less speed, according to the greater or less functional activity of each organ.

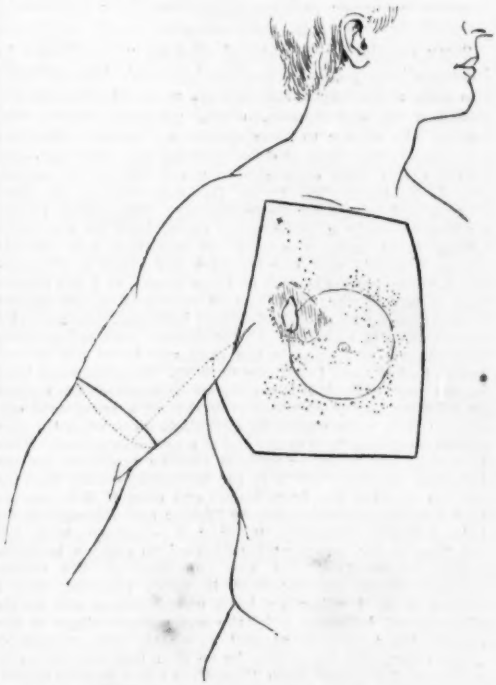
A CASE ILLUSTRATING A VERY EFFECTUAL METHOD OF TREATING EXTENSIVE MALIGNANT DISEASE OF THE BREAST.

By W. ARBUTHNOT LANE, M.S., F.R.C.S. ENG.,
ASSISTANT SURGEON TO GUY'S HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET.

THERE are many cases of extensive cancer of the breast and of the superjacent surrounding skin, associated with infection of the axillary glands and possibly also of those in the subclavian triangle, in which the surgeon must feel that if he could make a clean sweep of the whole disease he would be able to offer his patient a fair chance of subsequent freedom from recurrence, and in the immediate future much certain relief from pain and mental distress. The great difficulty he has to meet is the covering of a large and raw square surface whose sides may vary in length between eight and twelve inches. He also recognises the risks of septic infection associated with such a large wound, its painful and tedious nature, and the fact that even if he succeeds in grafting such a large area the resulting scar is necessarily a

most unsatisfactory one. Since I adopted the operative measures described in the Clinical Society's Transactions,[1] in a paper entitled "A more efficient Mode of treating Cancer of the Breast"—namely, removing the pectorals, carefully dissecting away every particle of glandular and areolar tissue from the axilla, and also, if necessary, dividing the clavicle and clearing out the subclavian triangle—I have found myself very well repaid for the extra time and trouble such an operation demands, and the very slight added risk from hæmorrhage and a certain limitation of movement resulting from the removal of the pectorals more than compensated for by the subsequent increased duration of the patient's life. One comes across cases, however, in which the skin is so extensively infected that this last operation is unsatisfactory owing to the large raw surface which is necessarily left. In such cases I would urge what at first sight appears to be a heroic measure—namely, amputation of the arm at the shoulder in order to obtain enough skin to cover the raw surface and to give a nice soft covering to the part. The patient will certainly die if she is not operated on, and in all human probability the arm will shortly become a source of distress to the sufferer owing to interference with the venous channels; therefore, it is no great deprivation to remove it. Besides, it diminishes the risk of the operation, it ensures immediate union, and within a very few days the patient is enabled to get about and enjoy an active existence. Perhaps I cannot do better than illustrate the method I here advocate by means of the report of a case.

A woman aged twenty-nine years, single, of a remarkably youthful appearance, was admitted under my care into Guy's Hospital on Sept. 9th, 1895, suffering from carcinoma of the right breast, which she had observed for the first time five months before. The mass was large and involved almost the entire breast. The skin was adherent over it and was ulcerated over a space as large as a five-shilling piece. All about the ulcer and for an area around the breast the skin presented minute nodules of infection. There were enlarged glands in the axilla, and in the subcutaneous tissue over the coracoid process a gland could be felt. It had apparently been infected from some cutaneous nodules just below it. Nothing could be felt in the liver, and the patient's general health and weight were as good as ever they were. The advantage of removing the arm, the possible benefit she would derive from it, and the risks she ran were fully explained to her, and she insisted on undergoing the operation. An incision was made along the length of the clavicle to the middle line, and the middle third or more of the clavicle was exposed and removed. The subclavian artery and vein were tied at the margin of the scalenus anticus, and all the areolar tissue and glands in the subclavian triangle carefully dissected out. There was no obvious infection of these glands, but beneath the clavicle the upper limit of the enlarged axillary glands was defined and the glands were turned downwards. Great care was taken not to injure the supra-scapular or other vessels crossing the subclavian triangle. From the inner limit of the horizontal incision another was carried down vertically along the middle line for about nine inches. It lay well outside the limit of skin infection. From its lower end another incision was carried backwards to the posterior fold of the axilla at what seemed a safe distance from the growth, and then it was run upwards along the posterior fold to the axilla, when it ran across the arm to the outer end of the clavicle. A vertical incision was made from the upper limit of the posterior axillary fold to the elbow, where it was crossed by a circular incision. The skin and subcutaneous tissue were dissected up off the deep fascia as far as the deltoid, out of which a large and sufficient flap was cut to ensure as much vascularity of the flap as possible. The inner part of the deltoid was removed and the limb disarticulated. The skin and all the subjacent soft parts were dissected off the sternum, clavicle, ribs, cartilages, intercostal muscles, serratus magnus, and posterior wall of the axilla, and the great square flap, which measured more than nine inches along each side, was fitted accurately and comfortably into the large exposed raw area. The part that corresponded to the circular incision around the arm was united to the edge of the median or sternal incision, while the edges of the vertical incision in the arm were connected to the upper and lower horizontal incisions in the thorax. Very little blood was lost during the operation. The growth was found to involve the greater pectoral, but the most careful subsequent examination of the parts excised showed that the primary growth, the skin, and glands were very freely removed. The patient ran the usual course of an aseptic wound, experiencing no discomfort or pain in the part. The illustration represents diagrammatically the condition of



The above illustration shows the positions of the incisions, with the ulcerated surface in the right and upper part of the breast. The cross indicates the position of the gland in the subcutaneous tissue, and the dots show the approximate distribution of the points of infection of the skin by growth.

the patient before the operation, and it shows very well the outline of the skin incisions in the chest and arm. Of course, the area of the surface covered by the skin of the arm after healing had taken place was considerably smaller than when the operation was done, owing to a certain amount of shrinkage of the loose flap.

I would just point out that the removal of a considerable portion of the clavicle enabled me not only to remove all glandular and areolar tissue beneath and about it and to tie the vessels securely and with a minimum loss of time, but it also allowed the scapula to fall into such a position as to give a greater length of flap and a less strain upon it than if the clavicle were left intact. Every operating surgeon of large experience is confronted too often with the results of very imperfect removal of the diseased structures, so much so that he sometimes cannot but think that the operator was influenced by a desire not so much to effect the thorough removal of the affected parts as to obtain a rapid recovery. It would seem obvious that such a course is not likely to reflect much credit on surgeons, and especially on operations for cancer of the breast.

St. Thomas's-street, S.E.

[1] Transactions of the Clinical Society of London, vol. xxvii.

LONDON HOSPITAL MEDICAL COLLEGE.—The Entrance Scholarships at this college have been awarded as follows:—Price Scholarship in Science, £120, Mr. H. Balean. Science Scholarships, £60 and £35, Mr. O. Eichholz and Mr. A. B. Soltau. Price Scholarship in Anatomy and Physiology, for university students, £60, Mr. R. C. Wall and Mr. J. H. Evans.

SORE-THROATS IN INFLUENZA; THE TONGUE AS AN AID TO DIAGNOSIS; THE DIFFICULTIES OF DIFFERENTIAL DIAGNOSIS.

BY JOHN TERRY, M.R.C.S. ENG., L.R.C.P. LOND.,
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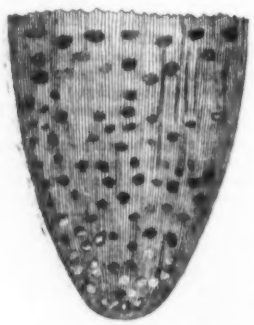
SOME months ago a letter of mine on "Sore-throats in Influenza" was published in THE LANCET.[1] The epidemic was then at its height, and I made a few remarks on the condition of the tonsils, uvula, pharynx, larynx, and tongue. In answer to some questions I asked I received numerous replies, most of them verifying my notes in every detail, and I wish especially to thank Dr. G. B. Barron, Mr. J. H. Caird, Mr. P. M. Davidson, Dr. E. J. McC. Morris, and others for their courtesy. Since then I have studied carefully a great many cases, both in the acute febrile stage and in a sort of subacute and chronic stage. I should now like to say a few words on the condition of the tongue in each of these stages, as I feel certain that if any of the conditions to be described are present in any case we may safely diagnose influenza, whatever else there may be in addition. The symptoms such as headache, feverishness, and pains in the back and limbs are so well known that of them I shall say nothing. Everyone must have known how difficult it is sometimes to diagnose for certain an ordinary case of influenza even during a recognised epidemic; it is more especially difficult to do so when the case occurs previously to or at the end of a general outbreak. True it is that the blood or sputum may be examined for the influenza bacillus; but it is not absolutely certain that the specific bacillus has been found, and even if it is granted that the bacillus described by Pfeiffer and Kitasato is the true influenza bacillus it is not everyone who has the time or the means at his disposal to make a bacteriological examination. If the condition of the tongue immediately to be described is fairly constant, and I believe it is, I think we have an important aid to the diagnosis of influenza. In the early acute stage of the disease the tongue is covered as a rule with whitish or greyish fur; this layer may be so thin that the pink substance of the tongue shows through it; or it may be absent, the tongue being clean, but often fissured. The characteristic feature, however, is the presence of dark purplish-red spots or elevations scattered all over the tongue, being most

FIG. 1.

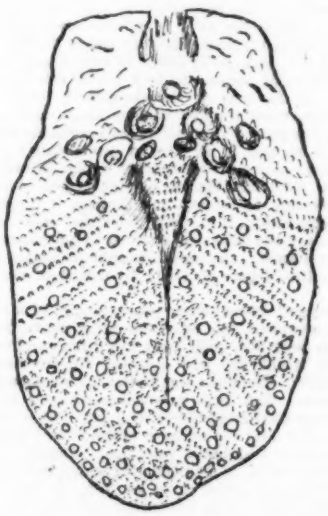


numerous on the anterior half of the dorsum and on the tip and edges; they are rather larger than an ordinary pin's head and are probably enlarged fungiform papillæ. At the back of the tongue, in the region of the circumvallate papillæ, there are several largish elevations varying in size from that of a pin's head to a split pea or even larger; they are fleshy in colour and somewhat resemble mucous condylomata. (Figs. 1 and 2.) When the tongue is coated with white fur the red elevated papillæ produce an appearance most characteristic—a white strawberry tongue; when there is no fur the appearance is more like a red strawberry.

[1] THE LANCET, March 9th, 1895.

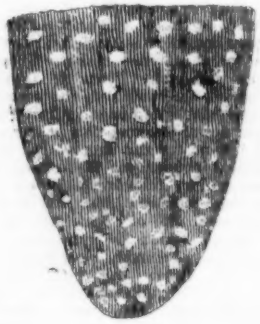
At a rather later stage the red spots or elevations have turned into pinkish-white jelly-like vesicles; on pricking them, however, no fluid escapes. In the chronic cases—i.e., those cases in which the patients have got over the acute febrile stage, but are still weak and ill, or those where there has been a relapse (which often occurs if the patient resumes his work too soon)—the tongue still shows quite characteristic signs; it is generally of a deep-red or purplish colour, is fairly clean or is sometimes slightly covered with a greyish or brownish

FIG. 2.



fur; the purple spots or pinkish-white jelly-like vesicles are no longer to be seen, their place being occupied by translucent white vesicles which are rather larger than those of the earlier stages. The elevations on the posterior third of the tongue are now white or greyish-white in colour. (Figs. 2 and 3.) I must point out that the order of the changes in the tongue as here described is not constant; the purplish spots may remain spots all through, or the jelly-like vesicles may persist throughout, and so on, but in a majority of cases the description holds good. In every case of influenza, however, one or

FIG. 3.



other of the conditions of the tongue is present. Besides these changes in the tongue, small whitish vesicles may be seen on the mucous membrane of the lips, cheeks, hard and soft palate, and on the pharynx; on the palate and pharynx they are sometimes much elongated and then look like small slugs; this latter condition, however, is not common. The throat is usually found to be dry and red, the pharynx is much congested and sometimes slightly ulcerated, and the veins on it stand out prominently, often presenting little varicosities. In the late stages the tonsils may

still be enlarged and red, but tonsillitis, which is often markedly follicular in the earlier stages, is now much less frequent; often, indeed, the tonsils and uvula have shrivelled up to very small dimensions. As the patient gets better the spots or vesicles become less and less pronounced, and finally, when he is well, completely disappear. The spots may, as before said, last some weeks, although the patient expresses himself as feeling quite well, but I do not consider that the influenza has departed until the tongue is quite clear.

I shall not here describe any of the sequelæ or usual complications of influenza, as they are so fully gone into in the various excellent books and pamphlets which have of late been written on this subject. But I must draw attention to one complication which I believe is not at all infrequent and yet, as far as I can ascertain, has not been heretofore described, at least in connexion with influenza. I refer to the development of a "membrane" on various mucous surfaces of the mouth and throat; any part may become affected, but the chief sites are on one or both tonsils, the uvula, the hard or soft palate, and on the pharynx or even the larynx. This "membrane" may be either diphtheritic or non-diphtheritic. Whichever it is, the micro-organism finds the congested or ulcerated mucous membrane caused by influenza a suitable soil for its further growth and development. The "membrane" formed in either case is physically almost the same; and the importance of recognising that the diphtheria bacillus is not the only one that can lodge in the mouth or throat and form a "membrane" there is enormous. Within the last fifteen months I have had under my care some forty-five cases with a "membrane" on some part of the throat or mouth; to look at, they resembled exactly cases of diphtheria, but beyond the "membrane" there was no other sign or symptom of it. In nearly all the cases the symptoms resembled a sharp attack of influenza with complications, but there was no rapid exhaustion with quick feeble pulse, no albuminuria, and no post-paralysis, and with proper treatment the patients got quite well in from about one to three or four weeks. The "membrane" after being pulled off or coughed up in no case returned, a superficial ulcer being left, which, although painful on swallowing or gargling, healed up rapidly. I may add that nearly every one of these cases presented what I have called "the influenza tongue." It may be urged that a bacteriological examination will settle the question; this, as matters are now, I very much doubt. On several occasions I have sent specimens of "membrane" and discharges from the throat to London to be examined. One case only of these was undoubted diphtheria, for there were rapid exhaustion, a quick, feeble pulse, albuminuria, and post-paralysis; but no diphtheria bacilli were found, although the membrane sent up to be examined was a large fresh piece untouched by medicines, gargles, or paints. Other cases—some apparently of ordinary follicular tonsillitis, and some of ulcerated tonsils without membrane and others with, but with no other sign of diphtheria—were said to be "swarming with the diphtheria bacillus." I believe the fallacy of examination is due to the fact that inoculation on animals is seldom done because of its expense, the time required, or the difficulty in obtaining a vivisection licence; hence one has to rely upon the appearance of the colonies and upon the microscopical examination of the bacilli found therein; surely this must be almost useless. One report says: "There is a good deal of irregular growth present, but not characteristic of diphtheria"; and the microscope showed "the presence of numbers of a short, thick bacillus closely resembling the 'short variety' of the bacillus diphtheriæ." Another states: "It is quite possible that the bacilli may be the 'pseudo-diphtheritic bacilli.'" In a third case (that of a man aged thirty years whose hard and soft palate, both tonsils, uvula, and pharynx were covered with patches of thick, white membrane, and which was diagnosed by several medical men as diphtheria) the report was: "Unable to detect any bacillus diphtheriæ either in the membrane, on the cotton-wool, or in the culture tube." In another case in which the patient got perfectly well in a week the report was: "The culture shows numerous whitish-grey colonies of growth very characteristic of diphtheria; the culture shows also certain other colonies"; and by the microscope were seen "first, the bacillus diphtheriæ of 'medium length'; secondly, groups of staphylococci." I quote these reports, not in any way doubting that the true diphtheria bacillus has been found, but to show that examination by culture and by the microscope without other confirmatory tests—e.g., inoculation—is almost if not quite useless, or at any rate very misleading.

In conclusion I wish to lay stress on the following points. 1. That the condition of tongue as described is an almost infallible sign of influenza and that there must be very few cases in which, in one form or other, it does not occur. Although in the last fifteen months I have seen over 1500 cases, I have not met one which did not show some of the appearances described. 2. That however simple a case of influenza may appear to be, it must be treated with great care, especially with regard to the purity of the air; for in crowded hospitals or in badly ventilated houses or in houses connected with or near bad drains or cesspools the congested or ulcerated mucous membrane of the mouth or throat may easily take up one or more of the numerous micro-organisms, causing follicular or simple tonsillitis, simple membranous inflammation, or diphtheria, as the case may be. 3. That the simple (non-diphtheritic) membranous inflammation, although having nothing in common with diphtheria, is highly infectious; and, though as a rule admitting of easy cure, in weakly adults or in children the disease may be extremely serious or even fatal. Since writing the above I have read an article in THE LANCET[2] by Dr. Thresh; I can corroborate fully nearly all his statements, and with him I agree that it is high time that we adopted some other name for those cases of membranous inflammation which are without any doubt, in my opinion, not diphtheria.

Guildford.

THREE CASES OF PAROSMIA; CAUSES, TREATMENT, &c.

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SUBJECTIVE sensations of smell of sufficient intensity to cause the patient to seek medical relief for the symptom alone being a comparatively rare disorder where the mental and general conditions are otherwise normal, the following three cases which have recently come under my notice may be of interest. The main features in all of them are the intensity of the unpleasant sensation and the absence in the nasal cavities of any visible pathological lesion.

CASE 1.—A man aged thirty-eight years came to me on May 6th, 1895, complaining of a "strong smell of ammonia," which he first noticed on recovering from a severe attack of influenza last February. The symptoms continued with varying intensity till May, and during that time he had been treated with nerve tonics and changes of air and surroundings, but without any effect. The unpleasant sensation was so strong that he left his business and avoided all his friends, as he was sure they were inconvenienced by it. He had never had any nasal trouble. Examination showed the nasal cavities to be perfectly healthy in every respect. I prescribed nerve tonics for him for a fortnight, but without any result, and then ordered him to use a solution of strychnia (ten minims to one drachm daily) as an intra-nasal spray. This proved permanently efficient in the course of a week.

CASE 2.—A man aged thirty-six years applied to me at the London Ear and Throat Hospital, complaining of a smell of "tallow candles" in his nose which had lasted eighteen months. He could not account for its presence, as he was otherwise in perfect health. He is one of a number of shop assistants, and, although none of his companions have ever complained of him, yet he is sure they notice the smell and avoid him. On examination the nasal cavities were found to be perfectly healthy and his breath in no way offensive. The treatment was similar to that employed in Case 1, but the relief was not complete, nor was it made so by the exhibition of stimulant snuffs and lotions.

CASE 3.—A woman aged forty-six years applied to me in June, 1895, on account of a "foul smell" in the nose, which led her to give up a valuable situation. Her medical attendant had treated her for "ozæna," and a rhinologist had told her that her symptoms were due to "decayed bone in the nose." The trouble had been going on for twelve months and latterly getting worse. As in the preceding cases, no one had ever mentioned an offensive smell as accompanying

[2] THE LANCET, Aug. 17th, 1895.

her, but she held to the belief that her friends avoided her on account of it. An examination showed that the nasal mucous membranes were normal excepting for a slight enlargement of the posterior extremity of the left inferior turbinate. On no occasion have I been able to detect any exposed bone, though I have searched for it with the smallest blunt probe, nor at any time has her breath been offensive. Besides this symptom, the patient has been the subject of various other climacteric troubles—e.g., heat flushes, occipital headache, giddiness, tinnitus, &c. The treatment has been mainly directed to her general condition by her medical attendant, and with the improvement of this her sensation of a bad smell has, *pari passu*, diminished; when the constitutional troubles are very slight the latter practically ceases. Only on one or two occasions, and as a placebo, have I prescribed an intra-nasal alkaline douche.

Remarks.—The first and third of these cases are interesting from an etiological point of view. The first is undoubtedly a post-influenzal neurosis, and similar cases have hitherto been described. The result of treatment would seem to point to the distribution of the olfactory nerves as the seat of the lesion rather than the olfactory bulb or a higher centre. The origin in the second case is obscure and the treatment less satisfactory than in either of the other cases. The last is undoubtedly a climacteric neurosis and reminds one of the various pharyngeal and laryngeal paræsthesiæ so commonly observed in females at this time of life. That such is the case is evident from the way in which the symptom has diminished and practically disappeared under treatment directed to the general condition of the patient, and the importance of recognising such cases is considerable when the possibilities of unnecessary local treatment are borne in mind.

Welbeck-street, W.

THE QUESTION OF LATENT HYPERMETROPIA IN THE VISUAL EXAMINATION OF CANDIDATES FOR THE PUBLIC SERVICES.[1]

BY W. M. BEAUMONT, M.R.C.S. ENG.,
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IN Sir Thomas Longmore's "Optical Manual" it is laid down that "candidates for commissions in the Royal Navy are not considered eligible who are subjects of any degrees of myopia or hypermetropia";[2] and this is corroborated in the "Regulations as to the Defects of Vision which disqualify Candidates for Admission into the Civil or Military Government Services," edited by Mr. Macnamara, in which it is stated that a candidate's eyes must be emmetropic. There would appear, then, to be no question that theoretically lads who are hypermetropic are ineligible for the navy; and yet it does not do to accept this ruling too absolutely. A boy is brought to a surgeon and reads the far and near types at the regulation distance, his colour sense is good, and there is no strabismus, but nevertheless he has two or three dioptres of hypermetropia. He is not emmetropic—*ergo*, he is not eligible for the Royal Navy. The parents are informed of the decision arrived at, but they resolve to send him up for examination; he passes the vision tests with flying colours, and the surgeon who gave a pessimistic opinion is discredited. On asking the lad what manner of examination it was which he underwent it will be found that it merely consisted of a vision-testing process, and that no attempt was made to discover any latent hypermetropia. How, then, can the statement that the eyes must be emmetropic be reconciled with the fact that no investigation is made to find out the nature of the static refraction? The explanation is, I believe—and I have substantial grounds for the belief—that in all visual examinations for the public services it is customary to consider $V = \frac{6}{6}$ equivalent to emmetropia. The extraordinary error is made of looking upon Snellen's type as a test of emmetropia. Perfect distant vision and emmetropia are considered synonymous, whilst latent hypermetropia is a condition of refraction unrecognised in every examination for which these regulations have been devised. As a consequence, a candidate with six or eight dioptres of latent hypermetropia will pass, where another with two dioptres of hypermetropia, one of which is manifest, will be unerringly rejected. It may be asked, What evidence is there that latent hypermetropia is not taken into account?—and in reply I would submit that, although the regulations for the navy are most emphatic that a candidate shall be disqualified unless both eyes are emmetropic,[3] yet in another part of the same regulations it is stated[4] that "if the individual can distinctly see the letters of the line D = 6 at 20 ft. without glasses, and with each eye, he will pass, as far as his sight is concerned, the examination for the army, navy, or any other service, provided his colour sight is good and that he does not squint." Nothing can be clearer than this—it is a naval eleventh commandment that you may be guilty of as many dioptres of hypermetropia as you please, but do not let them be manifest. If further evidence were required to show that latent hypermetropia is disregarded in the visual tests of the navy it would be found in a consideration of the well-known fact that emmetropia is a decidedly unusual condition of refraction. In an examination of the refraction of infants Ely found that 69 per cent. were hypermetropic.[5] Hansen found 94·4 per cent. of hypermetropia in school children between the ages of ten and fifteen years. Dürr in Hanover found 59·6 per cent. of hypermetropia, 32·2 per cent. of myopia, and only 8 per cent. of emmetropia between the ages of ten and twenty years. But, as the eye does not attain its complete development until about the age of sixteen years,[6] some allowance may be made for hypermetropia in the examination of boys for the navy. In 4000 eyes reported on by Miles[7] 3045 were hypermetropic, 787 were myopic, and in 106 there was mixed astigmatism. A rigid adherence to an emmetropic standard for any public service must infallibly break down from lack of suitable candidates. Mr. Work Dodd[8] in some recent statistics gives 2 as the percentage of emmetropia in persons who made no complaint of their sight, but as these statistics are founded upon a small total number of cases it would probably be safer to take a somewhat higher proportion of emmetropia. But even if it be allowed that 20 per cent. of the would-be candidates are emmetropic it must be remembered that 80 per cent. of the boys who would otherwise become naval cadets are prevented by their hypermetropia; and if 80 per cent. are prevented by this cause how many of the remaining 20 per cent. are prevented by myopia and how many by other physical defects? At the present time no adverse opinion should be given of the chances of a candidate passing the vision tests of the Royal Navy on account of hypermetropia. It is well to remember that as long as the defect is latent it cannot be seen. Perfection in the abstract is an excellent ideal, but emmetropia as a *sine quâ non* for service in the navy is an impossible standard, and it should be acknowledged that certain degrees of hypermetropia are admissible. A vision standard of $\frac{6}{9}$, without reference to the refraction, is unfair to the candidates, because whilst it stamps them as fit for service on entering it leaves it doubtful whether a little later in life they will be compulsorily resigned on account of hypermetropia; and as this defect can always be readily discovered in childhood there is no reason why more definite rules should not be made. Certainly facultative hypermetropia should not be permitted to masquerade in the guise of emmetropia, and it should be clearly laid down what amount of error is admissible. The only question really is what that amount should be. For some of the public services regulations are already in existence. In the Indian Departments of Public Works, Forests, Survey, &c., the limit is four dioptres of hypermetropia, for the Indian Medical Service it is not more than five dioptres, and for the Indian Marine not more than one dioptre. In several of the Continental armies "neither officers nor recruits are rejected with hypermetropia equal to six dioptres, but they are allowed to wear glasses."[9] In the resolution adopted by the International

[1] A paper read at the annual meeting of the British Medical Association held in London in July, 1895.

[2] The Optical Manual, by Surgeon-General Longmore, C.B.; third edition, 1885, p. 159.

[3] Regulations as to Defects of Vision which disqualify Candidates for Admission into the Civil or Military Government Services, 1895, p. 17.

[4] Op. cit., p. 16.

[5] H. D. Noyes: Diseases of the Eye, 1890, p. 81.

[6] Galezowski and Kopff: Hygiène de la Vue, 1888, p. 86.

[7] Archives of Ophthalmology, 1895, vol. xxiv., p. 418.

[8] Transactions of the Ophthalmological Society, vol. xiii., p. 202.

[9] Op. cit., p. 26.

Medical Congress held in London in 1881 hypermetropia was considered sufficient to exclude a man from being a sailor if before the age of eighteen he had one dioptre of manifest hypermetropia.[10] In the British navy it is the rule, I believe, that officers are allowed to wear glasses after they have attained a certain rank, and there seems to be no satisfactory reason why this rule should not be considerably extended. If a hypermetropic officer can only read $\frac{6}{9}$ with glasses it should be not only allowable but compulsory that he should correct his refraction, and then the exact number of dioptres of his hypermetropia is of little consequence.

Bath.

REMARKS ON THE HISTORY AND DISCIPLINE OF ENGLISH PRISONS IN SOME OF THEIR MEDICAL ASPECTS.

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IN the winter of 1773-74 John Howard made that celebrated journey which has been so graphically described by the late Dr. W. A. Guy,[1] and from which journey may be said to have originated the great prison reforms that have been in progress in England during the past 100 years. From the late autumn of 1773 to the spring of 1774, says Dr. Guy, there might have been seen, now at one country town, now at another, first of the midland districts of England, then of parts more remote, a gentleman on horseback, followed by his groom. It was not a time of the year when men take pleasure trips, and it was obvious that the gentleman had some serious business in hand, for he alighted at the county and borough gaols and spent some time there. Thence he would make his way to an inn, order the usual dinner for the good of the house, spread his note-book before the fire, and make a frugal meal of tea, bread, and (if he could get it) fruit. This gentleman was no other than John Howard, the lately appointed High Sheriff of the County of Bedford, the model landlord of Cardington, and he was travelling about in search of a precedent. He would find, if he could, one case at least in which the justices of the peace paid the gaoler of a prison a fixed salary. Had he succeeded he would have gone back to Bedford, near which town he lived, and would have strengthened the hands of the justices with a precedent, without which they had told him they could not act. But happily Howard failed. He could find no single instance in which a gaoler was paid a fixed salary. In lieu of salary the gaoler was allowed to charge certain fees, and these fees had to be paid by every prisoner, whatever the way in which he became such, and be paid before he could be permitted to leave the prison. He might be a poor debtor; he might be innocent of the crime with which he was charged and have been acquitted; or the grand jury might not have found a true bill against him; he might be a petty offender committed for some small theft, or a pressed man with home ties and duties, innocent of everything but not having a stomach to fight; or a man of violence—a highwayman, a burglar, a murderer; or a treacherous, fraudulent scoundrel, a forger, a receiver of stolen goods, a monster, a chronic fraud, or, perhaps, a raving madman. Whatever he was he must pay the gaoler's fees or remain in prison. The consequence was that innocent men by the thousand were kept locked up in prison—many for years or for life; many to die there, victims of gaol fever, confluent small-pox, and the other fatal maladies which spring out of the want of the prime necessaries of life—food, water, fuel, clothing, air, and exercise; some to be lashed into madness and some to lapse into fatuity. Howard could find no precedent for a better system of payment, but the winter's journey was not made in vain. He collected a mass of facts that at once led to great amendment of the law, and struck the death blow to the grossest and most nauseous tyranny that was ever suffered to reign in the midst of a free people. The winter's journey was not only no pleasure trip, but was one surrounded by incidents of danger and disgust as perilous as they were repulsive. When Howard went to his inn after the work of the day he used to spread his notebook before the fire. This he did that he might drive off the foul air it had absorbed in the prison. So foul was this air that many gaolers and even surgeons to gaols made excuses and would not go with Howard into the felons' wards. But nothing could appal him or turn him aside from the path of duty that he had chosen. This journey in search of a precedent, which revealed to Howard in all its revolting details the inner prison life of England, was the first step taken towards prison reform. Dr. Guy states that when, on the motion of Mr. Whitbread, Howard was summoned to lay his facts and figures before the Committee of the House of Commons, he left the House no alternative but immediate action. Two Acts were passed, the one abolishing the obnoxious payment of gaolers by fees, the other for preserving the health of the prisoners and preventing the "gaol distemper." In 1778 the Penitentiary Act was passed. This Act, which was permissive, provided for the placing of prisoners in cells alone, and it gradually came to be adopted in some of the county and borough prisons. But the cost of construction and the prejudice against separation created by the reports as to the results of the "solitary" system in America retarded the progress of a great reform. In 1784 rules were drawn up for the treatment and classification of prisoners, and in 1791 the Courts of Quarter Sessions became in some degree responsible for the periodical visitation and inspection of county and borough prisons.[2]

In the last decade of the last century the virulent gaol fever seems to have disappeared from prisons, though it is certain that a fever in no way distinguishable from gaol fever existed on board H.M.S. *Colossus* in 1796. This ship took on board, in the autumn of the year, a crew composed entirely of raw landsmen, the worst, according to Dr. Trotter, the fleet medical officer, that ever entered a man of war, of whom a great part had been discharged from gaols; and three or four times during the fitting of the ship fever broke out, one man falling ill, and then all the members of his mess. The disease made its appearance again during the cruise off the coast of Holland. Dr. Guy remarks that we owe to Dr. Trotter one of the most striking illustrations of the fact that a fever in all respects similar to the fever that formerly prevailed in prisons will break out on board ship when unwholesome conditions prevail, as starvation and cold, a scanty supply of impure water, deprivation and pollution of air, exclusion of light, idleness, filth, listlessness and grief. The French fleet which encountered ours on the glorious June 1st, 1794, was placed under the serious disadvantage of having such a fever on board all its vessels, while Dr. Trotter had "organised victory" by causing Lord Howe's fleet to go into action without a sick sailor on board. Slow but sure progress continued to be made in English prisons, and in 1818 there were few prisons without a chaplain. But even at this date no systematic employment had been found for the inmates of prisons; idleness prevailed in many county and borough gaols, and overcrowding was excessive. Nevertheless, the conditions were not such as to generate gaol fever. In 1835 and 1839 Acts were passed which further improved the administration of prisons, and inspection by Government officers was provided for; but it was not until 1865 that the provision of a separate cell for each male prisoner became compulsory. Even now legislation remained in great measure a dead letter owing to the fact that administration remained in the hands of independent local authorities, who failed to provide the requisite buildings, and were without experience save such as was gained by each in its own small area. The last great step in the direction of reform was taken in 1878, when the local prisons were transferred to the Government, and uniformity of administration for the first time became possible. There were then 113 local prisons in England and Wales; and such has been the effect of consolidation and concentration of authority that the number has been reduced to fifty-seven, with great and good results, the least of which is a large annual saving in the cost of management. Prisoners before trial are kept apart as far as possible from those undergoing sentence, they wear their own clothing (if it is not "utterly vile," as is often the case), they may provide their own diet, and may communicate freely with their friends. After sentence the prisoner becomes amenable to the progressive

[10] Transactions of the Ophthalmological Society, vol. ii., p. 195.

[1] John Howard's Winter Journey. By William A. Guy, M.B., F.R.C.P., F.R.S., &c. De la Rue and Co. 1882.

[2] The excellent and entertaining work by Major Arthur Griffiths, entitled "Secrets of the Prison House" (Chapman and Hall, 1894), contains most valuable information as to the history and management of prisons in this country.

stage system, and may raise himself by degrees to the fourth or highest stage, each promotion being attended with the acquisition of some privilege, as, for example, a larger supply of books and more frequent communication with friends and relatives. During all this time, and, in fact, during the whole period of his sentence in a local prison, the prisoner sleeps, takes his meals, and (usually) works in a separate cell. He is subjected to what is termed "separate confinement." This term is apt to convey to persons not familiar with the subject an erroneous impression of the conditions under which a prisoner is placed when undergoing confinement in a local prison. Although he is separated from other prisoners he is not left in solitude. He is visited frequently by various officers, he is well cared for, and his existence is rendered very endurable. Unless it be for idleness or misconduct he is not subjected to any depressing punishment. As I have previously remarked,[3] "instances are not wanting to show that separate or even solitary confinement for long periods is consistent with perfect mental and bodily health. The monks of the Grande Chartreuse live alone, each in his own 'cellule.' They remain silent for years, and hear nothing but the sound of their fellow monks' voices at the chapel services, yet visitors never fail to be struck with their healthy and contented appearance. Their food is simple but nutritious, and they are well provided with employment, so that their condition of life may be fairly compared with that of prisoners undergoing separate confinement at the present time in this country." It was not until the completion of Pentonville Prison that separate confinement was carried out continuously on a large scale and in a systematic manner, the results being recorded in detail in reports accessible to the public. Pentonville Prison was opened in December, 1842, and the Commissioners appointed for the government of the prison made favourable reports as to the condition of the prisoners from year to year until 1853, when the then new established convict system was in full operation, and the prison came under the control of the Directors of Convict Prisons. The deterrent and reformatory effects of imprisonment were attained without injury either to the bodily or mental health of the prisoners. There was but little sickness among them, cases of insanity originating in the prison occurred but seldom, and deaths were few. It appears evident from the minute detail into which the Commissioners enter in their reports, and from many of the expressions employed, that they were apprehensive of evil or misfortune of some kind, but these apprehensions were not justified by the result. In consequence of the success of the system of discipline carried out at Pentonville Prison a large prison after the same model was erected at Wakefield, and separate confinement was carried out there, with even fewer mental cases than occurred to Pentonville Prison. The same system in all its main features has been carried out, and continues to be carried out up at this day, in that and other local prisons without the occurrence of any cases of mental or bodily affection that can be reasonably ascribed to the influence of separate confinement.

In the consideration of the question as to what amount of separate confinement may be borne with safety the experience of the present Board of Commissioners during the last seventeen years appears to me to be of much greater importance than any recorded experience of former times. "The conditions forty or fifty years back" (I quote the memorandum to which I have already referred) "were not those of to-day. Sanitary science has advanced, construction has improved, the causes of disease are better understood, discipline and diet have been modified and changed, and experience has ripened. That experience shows that separate confinement under present conditions is not injurious to the mental or bodily health, and may be continued indefinitely." Separate confinement (using the term in its technical prison sense) lends itself well to any modifications that may be deemed necessary, in the case either of individuals or bodies of prisoners, and is compatible with the carrying out of industrial labour in workshops or with outdoor labour of any kind available. At whatever work the prisoner might be employed he would still sleep and take his meals in his own cell, which he would, in fact, occupy in the evening and at all times when not at work or at exercise or at the chapel services. The medical aspects of prison discipline as now conducted in this country have some of them been presented in my annual notes appended to the Reports of the Commissioners and Directors, and are all of them full of interest. It is not my object to enter into elaborate particulars in this short paper, which deals only with generalities, but there are one or two points to which I may call attention without entering into any tedious statistical or technical detail. Fever of any kind is now of rare occurrence in the prisons of this country, and when it does occur is usually imported, while diseases indicative of defective sanitary arrangements, as erysipelas, are conspicuous by their absence, notwithstanding that many of the inmates of prisons are drawn from quarters where infectious diseases are rife. The average daily population of the local prisons of England and Wales for the six years commencing April 1st, 1888, was 14,119. The mean annual death-rate for this period was 7·6, and the mean annual rate (per 1000 of the population) of releases on medical grounds was 4·5. Reckoning, however, the releases on medical grounds as deaths, and adding them to the actual deaths, the mortality was 12·0 per 1000 per annum for the period of six years. To count all the releases on medical grounds as deaths is, however, unfair to the prisons, seeing that prisoners are frequently released for diseases that may not be fatal, as chronic abscess, debility, abdominal tumour, cataract, paralysis, bronchitis, and so forth. A deduction of at least 25 per cent. for these cases should be made before the influence of releases on medical grounds on the death-rate can be accurately estimated. Making that deduction, the death-rate per 1000 per annum for the six years ending March 31st, 1894, may be fairly represented by the figure 10·9.[4] It may be doubted whether by any future efforts the ratio can be reduced materially below that point.

The number of cases of insanity proportionally to the population of the local prisons of England and Wales will appear very high or very low, according to circumstances and the way in which the matter is presented. If all persons remanded to prison for medical observation, and reported to the police authorities to be insane, are credited to the prisons, the number will appear to be very large; and if to these are added those who are found to be insane within a very short period of reception, as well as those found insane on arraignment or on trial, the number can be made to rise to the extravagant figure of 200 or more per 10,000. But if only those insane prisoners are taken into account who have been sufficiently long in confinement to render it possible that the insanity may have originated and developed in prison, the number will be very small. Everything depends upon the statistical method employed. It does not, of course, follow that a prisoner is sane when he is admitted into prison because no symptoms of insanity happen to be manifest at that particular moment. The Rev. W. D. Morrison, in his evidence before the late Departmental Committee,[5] mentions the case of a man who was six months or more in Wakefield Prison before it was discovered that he was insane. The Rev. Mr. Morrison says: "I was convinced that he was insane, but the doctor could not find any trace of it, and I could not find any definite trace of it for some time, but one day he was talking to me, and he said, 'I am the man that tried to shoot the Duke of Edinburgh at Melbourne.' That was his delusion, that he was the man that tried to shoot the Duke of Edinburgh at Melbourne, and that is how it came to be found out." And yet, according to the method of the Rev. Mr. Morrison himself, this case would have gone to swell the number of cases in which insanity arose in prison, and were (in his opinion) probably caused by prison treatment. The evidence of Mr. Stone, the chairman of the Visiting Committee of Birmingham Prison, before the late Departmental Committee, is probably as conclusive as a formidable array of statistics, and is decidedly more racy and interesting. I may premise that the prison at Birmingham may be taken as a representative prison, and that there is no reason to suppose that it differs in the smallest particular from other local prisons in respect of discipline and management.

"Q. 2681.—The Chairman (Mr. Herbert Gladstone): You say that you think that insanity in the Birmingham Prison is very rare?—Very rare indeed. Our returns of insanity are about 0·02. We have a mere nothing of it.

"2682.—And those cases that you have come in you do not think have been affected by prison?—Sometimes it is the

[3] See Memorandum on Separate Confinement, p. 49 of the Report of the Directors of Convict Prisons for the year 1887-88.

[4] See Appendix No. 21, p. 88, of Seventeenth Report of Commissioners of Prisons.

[5] See Question 3018, p. 105.

result of delirium tremens; that is really in the system before they come in.

"2683.—You have no reason to think that the prison discipline acts upon them?—No; I have very carefully watched them, and I have had a large mass of figures got out to produce to you if you want them, but it is not 1 per cent., it is not a quarter of 1 per cent., and we have 8000 prisoners who went through the gaol last year."

Before concluding this brief paper it may perhaps be interesting and instructive to glance back along the century now about to expire and to compare the English prisons of 100 years ago with those of the present day. In 1795 convicts were herded together in hulks, in which no attempt was made to check the evils of association, and "vice, profanity, and demoralisation" ran riot. Great evils—among them the indiscriminate crowding together of prisoners—were still prevalent in the county and borough prisons, but the reports of John Howard had begun to alarm the national conscience, and justices were beginning to visit and inspect these prisons at periodical intervals. There were nearly 600 prisons in the United Kingdom. In many of them no attempts were made to divide the males from the females, gaol fever was still prevalent, and horrible scenes of wickedness were occasionally enacted. John Howard had made his final journey through Holland, Germany, Prussia, and Livonia to Russia and Lesser Tartary, and had been laid to rest at Cherson, in Russia, where his remains have lain undisturbed to the present day; he had travelled 60,000 miles, and it is believed that he spent from first to last £30,000 of his own money in the prosecution of his self-imposed duties. If he could now revisit this country he would find that each inmate of the local prisons has a cell of a capacity of about 800 cubic feet to himself, and that this cell, which is in the cleanest condition possible, is furnished with special arrangements for the withdrawal of used-up air and the supply of fresh air. He would observe that the furnishing of the cell, though not luxurious, is sufficient for the needs of the prisoner; and he would also observe that the prisoner is supplied with the necessary utensils, with good food, with abundance of water, with books, and with a bell-pull by means of which he can draw the attention of the officer of the ward. He would find that the food is sufficient and well prepared, that a well-arranged hospital is provided for the care and treatment of the sick, and that on the expiration of his sentence Discharged Prisoners' Aid Societies are ready to take him in hand and to assist him in making a fresh start in life. Although the prison system of the present day in this country, like other human institutions, may not be perfect, it may be questioned whether the next hundred years will witness evolutionary changes comparable to those that have taken place in British and Irish prisons since 1795. The next great step would seem to be the recognition by society of its duties in the direction of the prevention of crime, and the discharge of its duties in such a manner as to convert the possible criminal into a useful member of the commonwealth. Whether the somewhat pessimistic doctrines of the criminal anthropologist be accepted as the basis of action, or the more hopeful view of those who regard a proclivity to the commission of crime as the natural outcome, in the majority of cases, of unfavourable surroundings from infancy upwards, there can be no doubt that the criminal elements in society may be largely reduced by such social reforms as the prevention of overcrowding, by attention to the details of sanitation, by judicious education, and by such training as will tend to eradicate habits of idleness. A distinctive feature in the character of the habitual criminal is a distaste for regular labour. The changes that are destined to take place in prison administration, and the measure in which society will interfere to prevent the genesis of the criminal during the next century, cannot, perhaps, be even roughly indicated, but it cannot be doubted that the good work initiated by John Howard will be continued in such manner and with such effect that some, at least, of the criminal classes will lose their characteristics as criminals, and will be finally absorbed into other classes of the social organisation.

St. Quintin-avenue, W.

MR. GEORGE MÜLLER, of Ashley Down Orphan Houses, Bristol, reached his ninetieth birthday a few days ago, and has received numerous presents and congratulations from friends in all parts of the country.

CASE OF HÆMATOCELE SUPERVENING ON AN ABORTION.

BY J. O'REILLY, M.B. DUBL., M.CH.,
SURGEON-LIEUTENANT-COLONEL, ARMY MEDICAL STAFF.

THE subject of this case was a woman about twenty-eight years of age, strong and healthy. She had been married four months and was about three months advanced in pregnancy. She had just returned from a long journey from a distant part of Germany, and had experienced a very rough passage across the channel. On Oct. 8th, 1894, the day after her return to Guildford, severe intermittent pains in the lower part of the abdomen set in. On being called to see her I found the uterus firmly contracted and all the symptoms pointing to an impending abortion. During the next two days there were frequent uterine pains. Perfect rest in bed was enjoined and opiates administered. About 8 A.M. on the morning of the 11th I received an urgent summons to see her, and I asked my friend Mr. Sells of Guildford to accompany me. On our arrival we found that an abortion had taken place and that an immense quantity of blood had been lost. A large chamber utensil was full of clots. The umbilical cord—untied—had slipped up into the vagina. I gave chloroform, and Mr. Sells removed a large number of blood-clots from the vagina, and eventually, but with great difficulty, managed to extract the placenta. The patient was quite blanched from loss of blood, complained of severe abdominal pain, and was in a state of almost total collapse. Ergot and opium were administered freely. Soon after the removal of the placenta the uterus contracted firmly, and no more blood was lost per vaginam. About an hour afterwards, however, the symptoms of shock became more pronounced, and on an examination of the abdomen being made a large mass was found occupying the site of the uterus. It was at first thought that the latter might be distended with clots, and it was accordingly washed out with warm boric solution. Nothing, however, came away. This was puzzling. A closer examination of the lower part of the abdomen revealed a large smooth elastic swelling in the hypogastric region, and on introducing the finger into the vagina a tumour could be distinctly felt pressing on this canal. Mr. Sells and I then came to the conclusion that this could be nothing else than a hæmatocele, due probably to an effusion of blood from some ruptured vessel into the sub-peritoneal tissue around the uterus. A smaller swelling was discovered to the left of the central one—apparently a smaller hæmatocele due to an effusion of blood in the course of the broad ligament. Nothing could be done except to keep the patient perfectly quiet in bed, support her strength, and administer opiates to relieve the pain and restlessness. She remained in an alarmingly weak state for some days, and suffered from profuse perspirations—generally in the early morning—and from frequent attacks of distressing vomiting. The temperature varied from 100° to 102° F., and the pulse was very weak and rapid. The smaller swelling cleared up in about a month. Shortly before this disappeared another appeared in the right iliac region and was attended with a good deal of abdominal tenderness and pain and distressing tympanites. The temperature rose to nearly 104°. This was probably an attack of pelvic cellulitis with subacute peritonitis, and it subsided in about a week under the free administration of opium and hot fomentations. The further history of the case—a dreadfully harassing and trying one to the patient and to her attendants—may be briefly summarised. The prominent symptoms were frequent profuse sweats, distressing irritability of the stomach, obstinate constipation, occasional attacks of severe abdominal pain, and constant tympanites. The temperature generally varied between 100° and 103°, though sometimes touching 104°, and the pulse was always very rapid—115 to 130—and occasionally of a running character difficult to count. The irritability of the stomach was so great that it was with extreme difficulty she kept down any nourishment. She became reduced to an alarming state of exhaustion and emaciation, and it was only after trying many kinds of food and stimulant that we succeeded in finding some that could be retained. These were the only things she could retain, and they enabled her to bear up successfully against her wasting illness. About the beginning of December the tumour, which had never

shown the slightest sign of any diminution in size, showed signs of enlargement, and indications were soon apparent that matter was forming and was making its way towards the surface. Soon a good deal of inflammatory thickening and hardness was observable all round the tumour, and it became completely and securely encysted. The pain in it now became agonising. Frequent and strong hypodermic injections of morphia were required. I may here remark that all through this trying case opium was our sheet-anchor. The quantity of it that the patient took by the mouth, by means of suppositories, and by hypodermic injections of morphia was enormous. For three months she was more or less continually under its influence. On Dec. 17th the abscess pointed externally at a spot two inches and a half below and slightly to the left of the umbilicus. The abscess wall could be made out to be adherent to the skin of the abdomen over an area equal to that of a florin. Chloroform having been administered a small incision with a scalpel was made through the skin in the centre of this area. This incision was carefully enlarged with a bistoury on a director, and the lips of the incision were then separated by the blades of a dressing forceps. About a pint of the most terribly fetid dark pus mixed with broken-down blood-clots was evacuated. A drainage-tube was inserted, the wound was dressed twice daily, and for several days the discharge was most copious and offensive, saturating the dressings and causing, by its intolerable odour, great distress to the patient. When the quantity had lessened somewhat the abscess cavity was syringed out twice daily with strong boric solution. This acted excellently. A few hours after the abscess was opened the temperature sank to normal and never afterwards rose above it. Convalescence was uninterrupted. In about six weeks the wound had completely closed. The patient is now in excellent health. The menses—which had been completely suppressed during her long illness—reappeared about the beginning of March.

Guildford.

MODIFICATION OF THE DISTAL LIGATURE FOR ANEURYSMAL DILATATION; A SUGGESTION.

BY PATRICK J. HAYES, M.D. R.U.I., F.R.C.S. EDIN.,
SURGEON TO THE MATER MISERICORDIÆ HOSPITAL, DUBLIN.

THE majority of hospital surgeons from time to time encounter cases of aneurysm where, the possibility of dealing with the proximal portion of the diseased artery being out of the question, the problem of inducing coagulation within the sac, either by the Brasdor-Wardrop application of ligatures on its distal side or the extremely hazardous introduction through the sac wall of foreign agents, must be considered. I have occasionally observed notable delay with regard to evidence of improvement after distal ligature, and in the case of a thin-walled aneurysm such retardation may entail rupture of the tense, frail wall where otherwise cure would have been the result of operation. It occurs to my mind that thrombosis can be caused to extend from a distal point rapidly and safely to even a deeply situated aneurysm by such a measure as the following.

The surgeon selects a favourable site for ligaturing the vessel or vessels on the distal side of the aneurysm, and in the event of there being two trunks for ligation he determines which is to be doubly ligatured and divided. Rough measurement of the distance between the aneurysm and the point for double ligature, with division of the artery, is now to be made and a piece of sterilised catgut is to be cut, its length being sufficiently in excess of the measured interval. The arterial trunk having been exposed, a double aseptic silk ligature is passed beneath it and the loop divided so as to leave cords with a space of, say, half an inch between them. The more distal ligature is now to be knotted and its ends removed, but the proximal ligature is to be only loosely tied with a single knot, which will serve merely to moderately compress the arterial walls. It will afford additional help and security if the artery needle be maintained in position beneath the vessel up to the time for tightening the proximal ligature. The next and distinctive step is this:—A small opening is to be made into the lumen of the artery, midway betweer. the ligatures, and through the aperture a slender cannula, occupied by nearly half the length of aseptic catgut already referred to, is to be introduced and directed towards the proximal or aneurysmal portion of the vessel, until it will have passed just within the part lightly compressed by the proximal ligature. The catgut is now to be gently pushed on through the cannula until the surgeon estimates that its free end will have reached, or perhaps entered, the aneurysmal dilatation. The cannula is then to be withdrawn and the proximal ligature to be firmly tied on the artery corresponding to the distal end of the intra-arterial cord of catgut. Subsequently the artery and free part of the catgut are to be cut across at the site of aperture midway between the ligatures. The object attainable by introducing into the lumen of the vessel a bougie of catgut long enough to reach the sac can be readily understood. The foreign substance must soon become enveloped in a coating of fibrin, and, as it were, act as a gubernaculum for extension of the coagulating process within the aneurysm. At the same time, the sac wall will not have been injured or weakened by any needle puncture, whilst risk of distant embolism will have been guarded against by the previous ligation of the trunk or trunks on the distal side. The question of danger from hæmorrhage during puncture of the artery can easily be answered. The finger and artery needle, supplying points of pressure and counter-pressure, will afford absolute security whilst the opening is being made and the introduction of the cannula being effected. The cannula is well filled by the catgut, so that when the proximal ligature is tightened on its tip little, if any, blood can escape through the instrument. Once a sufficient length of catgut has been introduced the tip of the cannula is withdrawn and the encircling ligature made perfectly tight on the artery containing the clot-determining catgut.

It seems rational to infer that aneurysms, otherwise beyond the reach of surgical treatment, may, with at least comparative safety, have conducted to them thrombi capable of inducing cure by coagulation. Moreover, the catgut, being adapted for solution and absorption under the agency of leucocytes, will, after having effected its purpose, gradually disappear, and with it, in all probability, redundant blood-clot occupying the arterial lumen.

Dublin.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

ERYTHEMATOUS RASH AFTER OPERATION DUE TO THE ENEMA, NOT TO THE ANÆSTHETIC.

BY H. BELLAMY GARDNER,
ASSISTANT ANÆSTHETIST TO CHARING-CROSS HOSPITAL.

AMONG surgeons of the day there is a very generally prevailing impression that the appearance upon a patient of a red rash after any surgical procedure may be due to the anæsthetic which has been employed. I should like to bring forward a few observations which will tend to relieve the anæsthetic from this accusation. I have now full notes of nine cases of this erythema, occurring chiefly among gynæcological patients, in two London hospitals. The rash is red, raised, almost papular in appearance, arising first about thirty hours after operation on the skin of the thighs and buttocks, then upon the chest, wrists, cheeks, elbows, forearms, and back, preceded and accompanied by a feeling of heat and irritation of the affected part, without pyrexia, lasting two and a half to three days, and fading off subsequently without desquamation. Six of these patients had enemata of hard yellow soap and warm water five hours before operation, when gas and ether were administered to produce anæsthesia. One patient, a child, was prepared in the same way and had chloroform as an anæsthetic. Two patients had exactly similar enemata with an exactly similar erythematous rash without the administration of an anæsthetic at all. In one of the first six cases the rash became intensified by a second enema given the next day. In another the woman stated she had had an exactly similar rash after an enema four months previously without any use of anæsthetics. The child had a slight recurrent rash after a second enema when the first rash had disappeared. Experience of anæsthetics shows that a transitory flush upon the

throat, neck, and chest during the early stages of administration, which disappears entirely in a few minutes, is all that can be regarded as directly due to this source. Four communications[1] have appeared in the London medical journals citing twelve cases in all of erythema after an enema; six of these had no anæsthetic and one was just about to have chloroform when the rash was discovered. Various explanations of the rash have been offered, but as my cases all had the particular kind of soap mentioned, and no rash resulted after the use of soft soap enemata in 400 other cases, I cannot seriously doubt that the kind of soap used is the main factor in producing the rash. On analysis the hard soap only contained a trace of iron, and was very slightly alkaline in reaction.

CASE OF EMBOLISM OF THE CENTRAL ARTERY OF THE RETINA.

BY E. C. LONG, L.R.C.P. LOND., M.R.C.S. ENG.,
PRINCIPAL MEDICAL OFFICER, BASUTOLAND.

THE patient was a well-developed Basuto aged twenty-two years, employed by the Government as a post-rider. There was no history of syphilis in his family, and he had four brothers and two sisters all living and healthy. He had never been ill as far as he could remember. On June 10th he returned from his usual post journey, and that evening complained of headache and noticed that his body was covered by an eruption. Chicken-pox was epidemic in the camp at this period. The following morning on waking he found he was quite blind in the right eye, and presented himself for treatment at the Government Hospital. The eye appeared normal, but ophthalmoscopic examination showed embolism of the right central artery. Retinoscopy showed both eyes to be hypermetropic to the extent of 2·75 D. Three days afterwards the white haze which at the first had obscured the vessels round the centre of the disc had moved outwards, leaving the vessels in the centre well defined. The veins appeared much larger towards the periphery and the cherry spot smaller, and the white haze round it had also extended in an outward direction, while the whole fundus appeared paler. Some of the scabs of the varicellar eruption were falling off and a few fresh vesicles were seen. After this the haze gradually cleared and on July 4th the following note was made: "Edges of disc well defined. It is much whiter and along the course of the arteries is a bright white line. The fovea presents a mottled appearance of red on a white ground, the white being highly refracting and having an almost metallic appearance. The patient continues quite blind in the affected eye."

The case seems interesting from the fact of its occurring in a young subject suffering from such a simple malady as chicken-pox. Careful examination failed to detect any evidence of either cardiac or renal trouble. The only point in connexion with a possible cause of which I can think is that the evening before the embolism occurred the patient rode some thirty miles with his post, the temperature being some six degrees below freezing.

REMOVAL OF A LARGE INSECT FROM THE HUMAN EAR.

BY EDWARD ARMITAGE, M.R.C.S. ENG., L.R.C.P. LOND., D.P.H. CAMB.,
GOVERNMENT PHYSICIAN FOR THE WAILUKU DISTRICT; PHYSICIAN TO THE MALULANI HOSPITAL, ISLAND OF MAIN, HAWAIIAN ISLANDS.

CASES of insects having found their way into the human ear are frequently cited, but, so far as I am aware, few authenticated cases are to be met with in the medical journals. The following case seems to me to be worthy of notice on account of the large size of the insect in comparison with the dimensions of the passage in which it was embedded.

On the morning of July 1st, 1895, I was summoned to my office to see a Portuguese aged thirty-four, who complained that an insect was lodged in his ear and requested me to remove it. The patient was a man of unemotional appearance and phlegmatic temperament, but he seemed to be suffering considerably. On drawing the auricle backwards and looking into the meatus, without the aid of a speculum I could not perceive anything; but after syringing with warm water for a few minutes I noticed the wing-sheaths of an insect appear. Using a pair of forceps I extracted a cockchafer. The insect was nine-twelfths of an inch long and five-twelfths of an inch broad at the junction of the head with the thorax. The long antennæ measured eight-twelfths of an inch. The creature was firmly fixed in the osseous meatus and required some force to remove it. Attached to it were particles of cerumen. The patient stated that he was awakened at 1 A.M. by a disagreeable sensation in his ear, and that in endeavouring to remove the cause he had pulled off portions of the wing-sheaths. The total length of the insect from the point of the head to the termination of the wing-sheaths was probably one inch. Subsequent examination with the aural speculum showed one of the legs fixed to the tympanic membrane, but he would not undergo further treatment for its removal, expressing himself as perfectly satisfied with what had been already done. Afterwards he experienced a "rushing noise" in the ear for about three hours, and then his aural sensations became normal.

[1] THE LANCET, Dec. 15th, 1888 (Dr. G. H. Burford); and Brit. Med. Jour., June 2nd, 1894 (Dr. C. W. Suckling); March 2nd, 1895 (Dr. G. E. Hale); and March 30th, 1895 (Mr. Kinsey-Morgan).

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. BARTHOLOMEW'S HOSPITAL.

TWO CASES OF FIBRO-ANGEIOMA OF THE NASO-PHARYNX TREATED BY OPERATION; REMARKS.

(Under the care of Mr. ANTHONY BOWLBY.)

CASE 1. *Fibro-angeioma of naso-pharynx; excision of upper jaw and removal of growth after ligature of the external carotid artery.*—A man aged twenty-one years attended the department for diseases of the throat at St. Bartholomew's Hospital on March 9th, 1894, on account of severe epistaxis. The history he gave was that five years previously he first had severe bleeding from the nose, and that since that time he had never been able to breathe through the nostrils; even before this time, however, he had suffered from occasional epistaxis and continued to do so subsequently. Four months before admission he consulted a medical man in Dantzig, who told him he had polypi and removed something from his left nostril, an operation which was followed by epistaxis for three weeks. Soon after this the patient came to England and was admitted as an in-patient at the Central London Throat Hospital, where more growth was removed from the nose, with considerable loss of blood. Since this time hæmorrhage from the left nostril had been almost continuous. An examination of the patient showed that he had evidently lost much blood, for, although a thickly built, swarthy man, his lips were pale, his pupils dilated, and his pulse rapid and feeble. He was bleeding from the left nostril only, and on mopping away the blood there could be seen a growth which occupied the whole of the nasal cavity on this side. After plugging the nostril an examination of the throat showed that very little blood was running down the pharynx, but that the soft palate was bulged and moved very little on phonation or deglutition. With the finger a large growth could be felt blocking the whole of the naso-pharynx and attached to the posterior pharyngeal wall. The nose itself was not much deformed, but was distinctly broadened at its base. The patient was put to bed, kept quite quiet for several days, and fed well; the bleeding from the nose was stopped after twelve hours by careful plugging, and the general condition improved quickly. Further examination now showed that

the growth in the left nostril was not nearly so red and semi-translucent as a mucous polypus and that the right nostril had no growth in its lower and anterior parts, but was quite blocked posteriorly. It was considered that the growth was a fibro-sarcoma of the naso-pharynx, and at a consultation on March 15th it was decided to remove a small portion of the tumour for microscopical examination, and not to attempt its extirpation except by completely exposing its attachments. The removal of a portion through the left nostril was followed by most profuse hæmorrhage, which was with difficulty arrested by plugging, and continued slightly for four days. A microscopical examination of the tissue thus obtained showed that the stroma was entirely fibrous, without any appearance of sarcoma, and that the greater part of the section was composed of innumerable small bloodvessels and cavernous spaces with practically no muscular tissue in their walls. After a further delay of a week for rest in bed and more feeding an operation was performed, with the kind assistance of Mr. Lockwood, on March 30th. The left external carotid was first ligatured in the neck by the usual incision, and this wound was at once closed. The upper lip was then split in the middle line and an incision was carried along the left side of the nose to the inner angle of the orbit, and when the soft parts had been reflected the nasal process of the superior maxilla was divided and the nostril explored. As the growth was found to have no intra-nasal attachment the left superior maxilla was next excised and the tumour exposed. Bleeding was arrested by sponge pressure, and then an attempt was made to avulse the growth with strong forceps. It was, however, so firmly fixed that no efforts could dislodge it. It was finally separated from the pharynx with a raspatory and torn away from the base of the skull, bringing away with it a small piece of bone from this region. The removal of the tumour was followed by a gush of blood, which was quickly stopped by sponge pressure and did not recur; in a few minutes the wound was quite dry. The skin flap was readjusted and the pharynx and nostrils plugged with iodoform gauze. After the operation the patient was much collapsed, but with the use of brandy, beef-tea enemata, and injections of strychnia he rallied in a few hours and made an uninterrupted recovery, both the facial incision and that for the ligature of the carotid healing by first intention. Six months later he continued well, and, having been fitted with a false palate and teeth, showed but little deformity. The nostrils remained clear, and there was no growth in the pharynx. He was again examined fourteen months after the operation, when the pharynx was found to be quite healthy.

CASE 2. *Pulsating fibro-angeioma of naso-pharynx; removal of tumour after resection of the hard palate and division of the soft palate.*—The patient was a healthy young man aged nineteen years who was sent by Mr. Trotter of Brandon on June 19th, 1894. His history was that for eighteen months past he had been quite unable to breathe through either nostril, and felt as if there was a swelling in the back of his throat. For a year he had noticed some watery discharge from the nostrils, but had never suffered from epistaxis. Nine weeks before he came under notice he became an in-patient at Addenbrooke Hospital, and on three or four occasions was treated by the application of the galvano-cautery and electrolysis. On admission he presented the usual appearances of nasal obstruction, the mouth being habitually open and the nostrils collapsed; the nose was not materially altered in shape. By anterior rhinoscopy it could be seen that the posterior nares were occluded by a red mass, which felt very firm when touched with a probe, and bulged into the nostrils. When the mouth was widely opened the palate was seen to be pushed down and almost motionless, and when the head was thrown back the rounded outline of a tumour was exposed. The hard palate was also depressed so that its arch was almost flattened out posteriorly. Examination with the finger showed that the soft palate was firm and resistant and that the hard palate was elastic and capable of being slightly bulged by firm pressure. On passing the finger behind the soft palate a firm rounded tumour could be felt occupying the entire pharynx and fixed both to the palate and to the posterior wall of the pharynx; it did not bleed on being touched. Mr. Thomas Smith saw the patient with Mr. Bowlby and agreed that it was a growth which required a complete exposure for its safe removal, and after discussing the operations that might be done it was decided to obtain access to the growth by dividing the hard and soft palate and cutting away as much bone as it might be necessary to remove. The operation was performed on July 3rd, with the assistance of the house surgeons, Mr. Rudolph Smith and Mr. E. Cross. Tracheotomy was done, the cricoid ring was plugged with sponge, and a Durham's tube was inserted. The soft palate was next split in the middle, and the growth, which was found to be adherent to it, was very cautiously detached; the soft palate was then cut away from its bony attachments, and the muco-periosteum of the hard palate was turned back so as to expose the palatine arch as far forward as the teeth. The detached soft palate and the muco-periosteum were then held aside by five long silk sutures passed on each side of the incision. When this had been done it was found that the hard palate had been almost quite thinned away by the pressure of the growth on its posterior part, and the thinned bone in this region was next easily removed with bone scissors, so as to make a gap about three-quarters of an inch wide. The central part of the hard palate anterior to this was then removed with a chisel and mallet as far forward as a point immediately behind the incisor teeth, a triangular portion of bone with the apex forward being then taken away. When this had been done an excellent view of the tumour was obtained. It was red, covered with mucous membrane, and pulsated very obviously. When compressed with a sponge it collapsed to about one half of its size, and when pressure was removed it enlarged to its former bulk with a series of pulsations like an aneurysm. It was evident that it contained large cavities full of blood, and after some deliberation as to the best mode of removing it Mr. Bowlby avulsed it with a large, curved, steel elevator passed behind the mass; its removal required considerable force, but the toughness of the growth prevented its tearing, and the whole tumour came away in one piece. The anticipated rush of blood, which was considerable, was arrested by plugging the pharynx with sponges, and on the removal of the latter after a few minutes the bleeding was seen to have almost stopped. It was then found that the tumour had been attached to the base of the skull and the posterior wall of the pharynx. The whole of the incision in the soft palate was now sutured, and the muco-periosteum was also sutured across the clefts in the bone. The naso-pharynx was plugged with iodoform gauze, and the tracheotomy tube was left in. Two days later, as there had been no bleeding, the tube was removed and the plugs were changed. The patient suffered comparatively little from shock and made an uninterrupted recovery. The palate healed completely, and the stitches were removed three weeks after the operation. Three months later the patient came to show himself, when it was found that bone had been reproduced along the entire cleft and that the soft palate moved freely on respiration and phonation. The voice also was clear and strong, and nasal respiration was free. A year after the operation Mr. Bowlby saw him again and found no sign of new growth, and in September, 1895, Mr. Trotter wrote in reply to inquiries that the patient remained quite well. An examination of the tumour showed that its cut section was white and fibrous. It contained one large blood cyst, as big as the end of the index-finger, and lined by a smooth membrane, as well as several smaller ones. Its size after removal was not as much as half its size when in the pharynx. Microscopically examined, the tumour was seen to be composed of dense fibrous tissue, embedded in which were innumerable vessels and many irregular cavernous spaces, which only differed from those of erectile tissue in not containing any muscular tissue in their walls.

Remarks by Mr. BOWLBY.—There are two points of interest in these cases which are of some importance surgically and which are worthy of a brief consideration: first, the nature of the tumours; and, secondly, the operations undertaken for their removal. With regard to the first point, it is my opinion that most of the sessile tumours of the naso-pharynx which occur in young male adults are angeiomatous rather than sarcomatous. It is true that they are very commonly spoken of as fibro-sarcomata, but from what I have myself seen of that growth I am sure that structurally they do not merit the term. The tumours in question are composed of very dense fibrous tissue containing practically no cell elements and not resembling sarcoma either to the naked eye or under the microscope. It is true that they are somewhat prone to local recurrence, but I think that this is often due to the fact that, owing to their wide attachment and the situation in which they develop, portions are liable to be left at the time of operation. The angeiomatous element is, I think, an almost constant factor in these

growths, though it is seldom so largely developed as in Case 2; and it is rare to find tumours in any situation in which pulsation is so marked as it was in this case. The reason that the angeiomatous nature of these growths is often overlooked is that after removal there are not only no obvious vessels to be seen on a freshly cut surface, but that on microscopical examination also the vascular spaces appear as mere slits in the section, there being as a rule no definite vessel wall forming the channel for the blood.

Secondly, with regard to the operation by which these tumours may be removed, it must be conceded that no single operation is satisfactory for all cases. There is, however, one thing essential whatever method is adopted—namely, that the growth be completely exposed before any attempt is made to remove it. It is further important, in view of the nature of the tumour, that when so exposed it should be torn away from its attachments as rapidly as possible, and that it should not be cut into or removed piecemeal. These precautions are necessary on account of the great vascularity of the growths in question, for hæmorrhage is much greater than in cases of sarcomatous or epitheliomatous tumours, and the danger of a sudden and profuse hæmorrhage is a very real one if these precautions be neglected. In Case 1 the risk of operation was increased by the loss of blood previously, and it was on this account that the external carotid was ligatured, with the result that much less blood was lost in the facial incisions and in clearing the bone than is commonly the case. It was also with a view of getting the operation completed as quickly as possible that the whole maxillary bone was removed at once. But in the second case the patient was young and vigorous and quite able to stand the more prolonged operation which was decided on. The operation performed in Case 2 may be described as a modification of that of Nélaton, from which it differs, however, in the section of the bone, the treatment of the soft palate at the time of operation, and in the restoration of the palate by suture. This restoration of the palate was recommended by Sédillot, but the operation itself does not appear to have been actually performed by this surgeon. In the case of my own the complete retraction of the soft palate and of the muco-periosteum of the hard palate enabled as much bone to be removed as was required to expose the whole of the pharyngeal vault and the tumour which occupied it, so that when this had been done there was as much room as could be desired for the actual removal of the growth. I am, however, convinced from cases I have seen that the splitting of the soft palate does not give sufficient room; whilst, on the other hand, I feel sure that when the growth is limited to the naso-pharynx the operation practised in Case 2 gives quite as much room as can be desired and is not open to the objection of causing subsequent deformity such as results from osteoplastic section or excision of the upper jaw. I was much indebted to Mr. Smith in Case 2 for his advice both before and during the operation.

BRADFORD INFIRMARY.

PERFORATING GASTRIC ULCER; RESECTION OF THE STOMACH; DEATH AFTER ELEVEN DAYS.

(Under the care of Mr. W. H. HORROCKS.)

A MARRIED woman aged thirty-three years was admitted to the Bradford Infirmary on Dec. 30th, 1894, with symptoms pointing to perforation of the stomach consequent on gastric ulcer. For several years she had been under medical treatment at intervals for gastric troubles, vomiting, and pain after food. Blood had never been seen in the vomit. For the past few months the symptoms had been less severe. Early on the day of admission she drank some hot tea. This was immediately followed by acute epigastric pain, faintness, and profuse sweating. As the pain continued to be very severe she was seen about four hours afterwards by her medical attendant, Mr. Mercer. Considering the previous history and the onset of the acute symptoms, Mr. Mercer strongly suspected perforation and asked Mr. Horrocks to see the patient with a view to laparotomy being performed. When seen ten hours after the first symptoms she was lying in bed with the knees slightly raised. Her expression did not indicate severe pain unless an effort was made to turn, when acute pain was shown by the facial aspect. The pulse was 98, good, regular, but somewhat quicker than it had been at the previous visit. There was a marked cardiac, basic bruit, apparently hæmic in nature. She complained of persistent burning pain referred to the tip of the tenth left rib. The abdomen was not distended, but the muscular walls were tense, so that deep palpation met with resistance. There was no localised tenderness in the epigastrium. An impaired percussion note was elicited in the epigastric and left hypochondriac regions. There was no diminution of the liver dulness. The patient had not vomited since the beginning of the attack. As the symptoms and signs were strongly suggestive of perforation she was removed to the Bradford Infirmary for an exploratory abdominal section to be performed. The operation, which lasted one hour, was performed fourteen hours after the onset of the acute symptoms. Ether having been administered, a median incision five inches long was made above the umbilicus. On opening the peritoneum some bubbles of gas escaped. There was no distension of the intestine or fluid in the peritoneal cavity. The stomach was drawn to the surface, and on its anterior aspect near the cardiac end a small opening the size of a crowquill was seen. Through this the mucous contents of the stomach escaped. The perforated part was drawn into the opening and the abdominal cavity packed with folds of Gamgee tissue. The edges of the opening in the stomach were pared with a knife and an attempt made to bring the edges together with catgut sutures. The stitches cut through the softened tissues, so a fusiform piece of the stomach wall, including the original opening, was removed with scissors. The margins of the enlarged opening were readily brought together by a continuous catgut suture. The serous layer was then inverted and a second row of continuous fine silk sutures applied. Finally, the omentum was turned up to cover the anterior surface of the stomach and fixed in position by a few silk sutures. The pads were removed and the peritoneum thoroughly cleansed by sponging. Two long glass drainage-tubes were inserted, the lower ends dipping into the pouches above the right and left kidneys. The abdominal wall was brought together with silkworm gut sutures. On the following day the patient had recovered fairly well from the shock of the operation. She had vomited once during the night, but the vomit contained no blood. A considerable amount of bloody serum was pipetted from the glass drainage-tubes. On the second day after the operation, as these caused considerable discomfort, they were replaced by rubber tubes. The rectal feeding, which had been effectual since the operation, was discontinued, as the enemata were not retained. Small quantities of food and stimulant were given by the mouth and retained. From this time the condition of the patient varied from day to day. There was no abdominal pain or distension; food was taken without discomfort, and the bowels were moved naturally. The tongue, which had remained red at the tip and margin, became drier and more thickly furred. A small stitch abscess formed at the upper part of the wound. The patient gradually became weaker, the symptoms of general peritonitis became more defined, and she died rather suddenly on Jan. 11th, 1895, the eleventh day after the operation. At the post-mortem examination the abdomen was found to be distended with sero-purulent fluid, which was localised by adhesions below the left arch of the diaphragm and in the pelvis. The small intestines were injected and glued together by flakes of plastic lymph. The stomach, which was covered in front by the adherent omentum, was considerably narrowed where the portion had been excised. The mucous membrane was in good apposition, and the peritoneal surfaces firmly adherent, no leakage having occurred. One of the inner row of stitches was seen in the stomach. The outer row was quite concealed by plastic lymph. Near the pyloric end the mucous membrane was thinned over an oval area with a raised margin, showing a second cicatrised ulcer.

Remarks by Mr. HORROCKS.—The previous history of epigastric pain and vomiting occurring in an anæmic woman was strongly suggestive of gastric ulcer even when blood had not been detected in the vomit. Perforation of the ulcerated stomach wall was indicated by the severe and sudden symptoms following the ingestion of the hot fluid. This was confirmed by the persistent localised pain, increased by any movement, by the constant contraction of the abdominal muscles ("guard action"), and the slow but steady increase in the pulse-rate. The natural position of the liver dulness is explained by the fact that the escaped air and mucous fluid were localised in the hypochondriac region and not generalised in the abdominal cavity. It was suggested before the operation that the case was one of acute gastric ulcer without perforation. This idea seemed negatived

by the severe character of the onset, the general hypochondriac dulness, and the acute pain, which was not localised over the stomach, but generalised over the region. The great increase of pain caused by twisting the trunk could hardly be caused by gastric ulcer. The amount of stomach wall removed depends on the size of the ulcer. It would probably expedite matters if the perforation was enlarged sufficiently to admit the tip of the finger. Flushing the peritoneal cavity with hot sterilised water seemed contra-indicated in this case, as the extravasation was not considerable in amount and was quite localised. It seemed reasonable to suppose that the peritonitis would remain localised if provision was made for the escape of the serous secretion. The time required for further section of the abdominal wall, flushing of the peritoneal pouches, and the insertion of a pelvic drainage-tube would have greatly increased the shock of the operation. As events proved, the peritonitis set up by the extravasated contents of the stomach was not localised by plastic lymph, so that the more severe procedure would probably have been better.

Medical Societies.

OBSTETRICAL SOCIETY OF LONDON.

Height of the Fundus Uteri above the Symphysis during the Puerperium.—Micro-organisms of Obstetrical and Gynæcological Interest.—Exhibition of Specimens.

A MEETING of this society was held on Oct. 2nd, Dr. F. H. CHAMPNEYS, President, being in the chair.

Dr. W. S. A. GRIFFITH and Dr. T. G. STEVENS contributed a paper entitled "Notes on the Variation in Height of the Fundus Uteri above the Symphysis during the Puerperium, the Conditions which influence this, and the Practical Conclusions which may be drawn from such Observations." It demonstrated the importance of recording by measurement "charts of involution" during the puerperium. It was for the most part drawn up by Dr. Stevens, and was the result of observations by Dr. Griffith and Dr. Stevens at Queen Charlotte's Lying-in Hospital. The method of measurement was first described, with the precautions necessary to avoid errors, and the method of recording the measurements on the ordinary temperature charts. The measurement is the height of the middle of the fundus above the symphysis. The sources of error are: (1) distension of the bladder; (2) distension of the rectum; (3) distension of the small intestines; (4) prolapse of the uterus; (5) abnormally high uterus; (6) unusual bulk of uterine muscle; (7) retroversion of the uterus; and (8) excessive lateral obliquity of the uterus. The pathological conditions which interfere with the involution of the uterus, and therefore with the descent of the fundus, are: (1) retention of portions of placenta and membranes and of blood-clots and lochia; and (2) putrid decomposition within the uterus. (There have been no septic cases to study.) Charts illustrating normal involution and its variations and pathological conditions were given, and their value in indicating, even before any rise in temperature, putrid decomposition was demonstrated. Reference was made to the works of Serdukoff[1] and Barbour.[2]—Dr. MCCANN wished to mention as a source of error in such measurements as those made by Dr. Griffith and Dr. Stevens marked anteversion of the uterus. With regard to the influence of suckling he had found that in women who had no milk involution was rapid, while in those who had milk and nursed their children involution was rapid for the first few days, the rapidity diminishing later, probably owing to the stimulus from the breasts decreasing. The effect of prematurity of labour as a cause of delayed involution was noted, and prolonged labour delayed involution for the first days. It was important to determine on what day the uterus became a pelvic organ, for on this rested to a large extent our opinion as to when a puerperal woman should assume the erect posture. Text-books stated that a patient ought not to leave her bed before the tenth day. Dr. McCann thought that a more scientific method was to investigate the position of the uterus before giving an opinion. He gave some statistics showing the dates on which the uterus became pelvic in primiparæ and multiparæ respectively.—Dr. STEVENS said, in reply, that with regard to Dr. McCann's query as to extreme anteversion being a source of error in measuring the uterus, the dorsal position assumed for measuring purposes would tend to correct that displacement unless the anteversion were so extreme as to make the fundus lie entirely behind the symphysis pubis.—Remarks were made by Dr. GRIGG and Dr. GRIFFITH.

Dr. G. D. ROBINSON read a paper on Certain Micro-organisms of Obstetrical and Gynæcological Interest. He pointed out that in fatal cases of puerperal sepsis the streptococcus pyogenes is constantly found in the blood and tissues, and mentioned some of the circumstances which cause increase or diminution of virulence in this organism. Normally, after labour the uterine cavity was known to contain no microbe; but in cases of puerperal sepsis many micro-organisms of different sorts were found both in the uterine cavity and in the substance of the decidua. Of these only the streptococcus pyogenes appeared to be able to pass through the uterine walls along the veins and lymphatics, and so to cause a general infection. This microbe might in these cases cause death without producing any obvious lesion, and three cases were cited in the paper. Much more frequently the streptococcus set up suppuration in various tissues. Sometimes this microbe produced false membranes on the peritoneum or genital tract, with or without suppuration. Two cases were cited. Lately in some cases of phlegmasia dolens the streptococcus pyogenes had been found in the clots plugging the veins of the uterine walls and broad ligaments (more rarely in the clots in the iliac veins) and even infiltrating the vein wall itself. The supposed connexion of the bacillus coli communis with various inflammations (usually suppurative) was next pointed out, and a case was quoted in which a woman four months pregnant had intestinal obstruction from retroversion of a gravid uterus. Abortion occurred four days after reposition, and was followed in a few hours by fever and diarrhœa, which continued until the death of the patient five days later. During life pure cultures of the bacillus coli communis were obtained from the uterine discharge, and after death these were obtained also from the uterine cavity, peritoneum, and blood of the heart. Attention was next drawn to the gonococcus, its appearance as seen in gonorrhœal pus or in pus culture, its relation to gonorrhœal discharges, and the situations in which it had been found.—The PRESIDENT said that the paper was valuable as a summary of the present state of knowledge of a subject which most obstetricians have to take second-hand. One fact, with regard to the comparative impermeability of the decidua to micro-organisms, struck him as being important practically. It might not always be safe to curette the uterus when its contents were septic. In one such case within his own knowledge infection seemed to follow curetting, and a fatal result ensued.—Dr. C. H. ROBERTS asked Dr. Robinson if he knew the exact clinical appearance in the cases of white leg referred to in the paper, for the term "white leg" was made to include many forms. Dr. Roberts believed that the definite white brawny legs, with a very early onset of symptoms, and often with distinctive pelvic signs (parametritis &c.), were generally septic, while the commoner thrombotic leg came on generally later—viz., about the tenth to the twelfth day. He believed that high temperature did not necessarily mean sepsis. He also asked Dr. Robinson if anything was known of cultivations of the micro-organisms found in the brawny legs, and whether the streptococcus pyogenes was invariably found. He suggested that the bacillus coli communis was the cause of some cases of suppuration in ovarian tumours and extra-uterine sacs, which, on account of some reason for lowered vitality, became permeable to these organisms. If the streptococcus pyogenes were the only organism which had the power of penetrating the deeper layers of the uterus and the lymphatics, he thought that the early removal of the superficial layers by curetting should be attempted, combined with the antiseptic treatment of the uterine cavity.—Remarks were made by Dr. GRIGG and Dr. MCCANN.—Dr. ROBINSON, in reply, said he was unable to give any information as to the colour of the skin in the fatal cases of phlegmasia dolens, as this point had not been noted in the report. He thought that culture experiments made during life would be of no value, since it had been demonstrated that the secondary clots in the affected limbs rarely contained streptococci even in those fatal cases of the disease in which numerous

[1] Edinburgh Medical Journal, May, 1875, p. 965.
[2] The Anatomy of Labour, 1889.

organisms were found in the primary clots and walls of the vessels. He had experienced the usual difficulty in separating the gonococcus from other microbes. According to his experience, the best method of doing this was by making plate cultures with a mixture of blood serum (human, ox, or horse) and agar-agar in the manner recommended by Wertheim and others.

Dr. WILLIAM DUNCAN showed specimens of Ruptured Tubal Gestation and Double Pyosalpinx complicating Pregnancy.

The PRESIDENT announced that the next meeting of the society would be made special, for the purpose of considering some recommendations of the Council regarding the society's laws.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

President's Address.

A MEETING of this society was held on Oct. 4th, Mr. A. SYMONS ECCLES, M.B., President, being in the chair.

Mr. KEETLEY moved a vote of condolence with Mme. Pasteur.

The PRESIDENT gave an address on the Advantages of Oxidation. It was remarked that a large portion of the oxidation processes occurred in the muscular system, and mention was made of the series of changes taking place in an active muscle, the sense of weariness being attributable to the accumulation of incompletely oxidised products. The grave consequences of partial arrest of oxidation processes were alluded to and stress laid on the presence in the system of leucomaines as a result, leading in some cases to a morbid condition which might best be termed "leucomainæmia." Reference was made to the work of Bouchard and others, and it was pointed out that in chlorosis, gout, &c. there was evidence of insufficient oxidation with excess in the urine of leucomaines and other products of incomplete oxidation. The train of symptoms generalised under the term "neurasthenia" were attributed to suboxidation. The method of von Poehl for the detection of leucomaines in the urine was described. It was shown that in melancholia &c. the symptoms varied *pari passu* with the amount of precipitate by von Poehl's process. The parallelism between the prodromata of acute fever and some of the symptoms of functional neuroses was attributed to like causes being in operation, though not of common origin. Comparison was drawn between symptoms of cinchonism and those of coprostasis, the poisons in both interfering with the oxidation process. It was suggested that much of the value of animal extracts might be assigned to their potency as oxidising agents. The value of exercise and other therapeutic means for promoting oxidation was detailed and illustrated by the narration of cases.

Dr. LAUDER BRUNTON laid stress on the value of apparently theoretical observations, and pointed out that many of Pasteur's most practical results arose therefrom.

Dr. CAMPBELL POPE made some remarks and the PRESIDENT briefly replied.

KIDDERMINSTER MEDICAL SOCIETY.

So-called Hermaphrodite — Exhibition of Cases and Specimens.—Intestinal Obstruction.—Osteotomy.

A MEETING of this society was held on Tuesday, Sept. 17th, Mr. D. CORBETT being in the chair.

Mr. J. L. STRETTON read notes of a case of So-called Hermaphrodite. A man aged sixty-seven years was born in a small village and pronounced a female; he was brought up accordingly and still believes that he is a woman. The condition of the genitals is one of hypospadias, the under part of the urethra being absent from the orifice to the junction of the penis and scrotum, where the outlet is now situated, otherwise he is quite naturally formed and but for regular shaving would have a well-marked beard and moustache. He asserts that he has never experienced any sexual appetite, and that he has lived alone in a hovel and worked in the fields. He is at present an inmate of one of the female wards of the Kidderminster Workhouse by direction of the guardians and the local inspector, who still maintain that he is a woman, and the Local Government Board see no reason to interfere.

Mr. P. E. DAVIES exhibited the Kidneys from a case of Purpura, which showed numerous hæmorrhages. The boy, who was aged five years, was admitted into the Children's Hospital in a very exhausted condition and rapidly became comatose, dying twenty-four hours later. The urine was normal, and the necropsy showed no change in the brain.—Mr. W. MOORE remarked on the rarity of coma in this disease, and Mr. KITSON mentioned that several cases of purpura had recently occurred in the same locality as this one, two of them in the same house.

Mr. J. L. STRETTON read notes of a case of Intestinal Obstruction in a youth aged seventeen years. There was no history of any definite diseases, no traumatism, and no history of rupture. He had had pain off and on about his "stomach" since childhood. Last Easter he had a severe attack of abdominal pain and sickness, but no obstruction, and the vomit was not fæcal. He was laid up for six weeks and has remained well until the present attack. On Aug. 28th he was attacked with severe pain while at the watercloset; he passed a hard-formed motion, the pain continued, and he vomited. The following day the vomit was fæcal. His medical man treated him with hot fomentations and injections, with no effect. The patient lies on his back with the knees drawn up, the breath has a fæcal odour, and the pulse is 84. The tongue is furred and moist. The abdomen does not move on respiration, it is slightly distended, and there are no signs of hernia. There is a feeling of resistance about the right iliac region, and it is dull on percussion. Mr. J. L. Stretton opened the abdomen in the middle line; no fluid escaped, and on introducing the hand a band was at once felt and divided. There were several hard lumps in the large intestine, near the seat of obstruction, and the bowel was glued to the anterior abdominal wall by recent adhesions. Owing to the state of the patient the operation could not be prolonged. He was comfortable on the following day, and the vomiting ceased, but he became more collapsed and died in the evening after a severe attack of vomiting. No fæces or flatus had passed. The necropsy twelve hours after death showed that the abdominal wound appeared to be healthy, and that there had been no recent peritonitis. The root of the band was about the diameter of the little finger; it had extended from midway above the transverse colon (attached to its mesentery), across it, bending it down, and was attached to the mesentery of the ileum near the cæcum. There were several recent adhesions between the colon and the abdominal wall. The obstruction had been relieved by the operation. The case was of interest on account of the extreme rarity of the condition. Treves speaks of it as a pathological curiosity.

Dr. EVANS showed a girl aged fourteen years, from whose right leg the whole length of the diaphysis of the tibia had spontaneously exfoliated; it was only held *in situ* by a small band of granulation tissue and was easily removed. She has made an excellent recovery and has a useful limb, new bone being formed. A water-colour drawing of the condition was exhibited.

Mr. J. L. STRETTON read a paper on Osteotomy, with notes of one hundred and eight operations.

YARROW HOME FOR CONVALESCENT CHILDREN, BROADSTAIRS.—We understand that this home, the formal opening of which lately took place, is now in perfect working order and gradually filling up. The trustees are prepared to receive applications for admission of children, which should be addressed to the Secretary of the home at the London office, 73A, Queen Victoria-street, E.C. It should be understood that the institution is intended to benefit the children of middle-class or professional persons in adverse circumstances. The limits of age for boys is from four to fourteen and for girls from four to sixteen.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.—St. Bartholomew's Hospital is specially rich in endowed scholarships, and five of these are awarded to students just entering upon their medical studies. The competition, which was held on Sept. 25th and following days, has resulted in the following awards:—1. Scholarship of £75 in Biology and Physiology for students under twenty-five years of age: C. S. Myers, B.A., Caius College, Cambridge. 2. Scholarship of £75 in Chemistry and Physics for students under twenty-five years of age: J. S. Williamson, 3. Scholarship of £150 in Biology, Chemistry, and Physics for students under twenty years of age: R. C. Bowden and R. H. Paramore (*æquales*). 4. Preliminary Scientific Exhibition of £50 in Biology, Chemistry, and Physics for students under twenty years of age: J. C. M. Bailey. 5. The Jeaffreson Exhibition of £20 in Classics and Mathematics: H. A. Kellona-Knight.

Reviews and Notices of Books.

The Cell: Outlines of General Anatomy and Physiology. By Dr. OSCAR HERTWIG, Professor in the University of Berlin. Translated by M. CAMPBELL, and edited by HENRY JOHNSTONE CAMPBELL, M.D. Lond., Demonstrator of Physiology in Guy's Hospital. With 168 Illustrations. London: Swan Sonnenschein and Co. 1895. Pp. 368.

THE immense progress that has been made during the last half-century in our knowledge of histology, and the vast importance of the cell in every department of biology and in every function of life, render it extremely desirable that a full and comprehensive account of the nature of these elementary units of the plant and animal bodies, embodying the results of the most recent researches, should be given from time to time by a competent writer. In Germany this has been frequently and well done, as by Schleiden, Schwann, Kölliker, von Mohl, Virchow, and many others; but in this country we can only point to the writings of Beale, Huxley, Cleland, and Turner for such a comprehensive account, and we are greatly indebted to Mr. Henry Johnstone Campbell for having translated so ably the admirably written work of Dr. Oscar Hertwig, which may be regarded as representing the present standpoint of our knowledge respecting the structures and functions of the cell. The author commences with a short history of the cell and of the protoplasmic theory, in which he points out the modifications that have taken place in our definition of the word "cell." Grew and Malpighi were the first who noticed the cubical or polygonal spaces in plants; Schleiden dwelt upon the importance in plant cells of the nucleus, a structure that had previously been discovered by Robert Brown in his researches on orchids; whilst Schwann, with much labour, extended to animal structures the same conceptions that had already been generally accepted in regard to plants. By these well-known writers and teachers the cell was defined as a small vesicle with a firm membrane enclosing fluid contents and a nucleus. The study of the vegetable cell by von Mohl led him to lay much stress upon the slimy contents of cells, to which he first applied the term "protoplasm," though the word itself had been coined by Purkinje, and he observed the spontaneous movements which it was capable of performing. By degrees, with the more precise methods of microscopical observation, it was noticed by many investigators, but especially by Bischoff and Kölliker, that animal cells were very commonly unprovided with a membrane, and that which the older observers regarded as the most essential part of the cell—the cell membrane—was really of minor importance. Schultze and de Bary next proved that the protoplasm of plants and animals and the sarcode of the lowest organisms are identical; and thus the modern definition of a cell has come to be that it is "a little mass of protoplasm which contains in its interior a specially formed portion—the nucleus."

In the next chapter Dr. Hertwig describes the chemico-physical and morphological characters of the cell as above defined. Our chemical knowledge of protoplasm is very unsatisfactory; indeed, it is not to be regarded as a chemical, but as a morphological, conception. It is probably composed of a large number of different chemical substances united in the form of minute particles into a highly complex structure. It is alkaline, contains a large percentage of water, and the elements carbon, hydrogen, oxygen, nitrogen, and sulphur, with many salts. Examined with very high powers of the microscope, it presents certain appearances of structure. But these are so obscure that there is a great difference of opinion in regard to their nature—some, as Frommann and Klein, holding to a framework theory, seeing a network of fibrils in the interstices of which fluid is contained; others, as Bütschli, having adopted a foam or honeycomb theory, comparing it to an emulsion; others, again, as Flemming, maintain a "filament" theory, in which the substance of protoplasm is regarded as composed of a thread substance—mitoine—and an interfilamentous substance—paramitoine; and, lastly, a "granula" theory is held by Altmann, the granula being exceedingly minute creatures or bioplasts swimming in a gelatinous or "intergranula" substance.

The vital properties of the cell are considered under the respective headings of the Phenomena of Movement; the Phenomena of Irritability; Metabolism and Formative Activity; and Reproduction. The several kinds of movement are true protoplasmic movements; ciliary or flagellar movements; the movements of the pulsating vacuole; and the passive movements and changes of shape that the cell exhibits. In regard to the contractile vacuoles Dr. Hertwig agrees with Schwalbe and Engelmann that they possess contractile walls, though they are not clearly defined from the rest of the protoplasm. But he differs from Bütschli—who thinks that they only represent a drop of water in the protoplasm—in believing that they have a definite existence, in proof of which he points to their constancy, to the presence of radiating canals, and to other circumstances. The phenomena of irritability include those of muscular movement, in speaking of which the author remarks that, whilst the earlier natural philosophers held that it was the expression of a special vital force only seen in organised nature, modern science has discarded the theory of vitalism, considering it to be a very complicated chemico-physical phenomenon, differing only in degree from other chemico-physical phenomena of inanimate nature—that is to say, "the external stimuli come into contact with a substance very complex in structure, an organism which is an exceedingly complicated material system, and in consequence they give rise to a series of very complex phenomena." He adds, however, a word of warning that we should not fall into the very common mistake of trying to explain vital processes "as being due directly to mechanical causes" in consequence of their analogy to many phenomena seen in inanimate objects.

A very good section is devoted to the internal plasmic products of cells under the heading of Morphology of Metabolism. It includes the consideration of cell-sap, fat, glycogen, starch, mucin and albuminates, crystals and crystalloids, and, amongst others, bodies named trophoplasts. These last occur as constantly as the nucleus and possess great functional independence. They are of great importance in the nutrition of plants, for the whole process of assimilation and the formation of starch take place in them. They are small ovoid bodies composed of a substance similar to, but differing from, protoplasm. They are easily destroyed by water, but may be fixed by iodine or by strong picric acid. They often exist in great numbers in a cell and may actually change their form. Through their agency and derived from them the starch and chlorophyll granules are formed. Recent researches have shown that chlorophyll granules are capable of undergoing great changes in shape, offering to direct sunlight a small surface and to diffused daylight a large surface. Another remarkable internal plasmic product is the nematocyst, a weapon of attack possessed by the Cœlenterata, as many bathers during the summer season of this year found to their cost. The external plasmic products are cell membranes, cuticular formations, and intercellular substances, to each of which a few paragraphs embodying the results of the most recent investigations are given. The latter part of the book is occupied with the consideration of the phenomena of Reproduction. The concluding chapter is devoted to

the question of Heredity and the Relation of the Cell to the Elemental Germ.

There is an excellent bibliography appended to each chapter, and there is a good index. The book is very well got up, and the illustrations are numerous, well selected, accurate, and excellently printed. It occupies a space in literature which much needed to be filled.

Forensic Medicine and Toxicology. By J. DIXON MANN, M.D. St. And., F.R.C.P. Lond., Professor of Medical Jurisprudence and Toxicology in Owens College, Manchester; Examiner in Forensic Medicine in the University of London and in the Victoria University; and Physician to the Salford Royal Hospital. London: Charles Griffin and Co. 1893. Pp. 639.

WE regret that through inadvertence the above important work by Professor Dixon Mann has not previously received editorial review at our hands. From the important medico-legal posts held by the author he has unusual opportunities for acquiring practical experience of his special subject and of ascertaining the wants of students and practitioners. On looking through the pages of his book the reader will recognise the lucid manner in which the facts are stated and the ready way in which the deductions are drawn and formulated. Chapter I. deals with the coroner's and magistrates' court and with assizes. The procedure in the coroner's court is on the whole well discussed, but we fail to notice any mention of the following facts: that the coroner has magisterial functions which enable him (1) to commit for murder or manslaughter; (2) to order an exhumation of a body on his own initiative; and (3) to take hearsay evidence which would not be admissible before a magistrate or at an assize court. The counsel to medical witnesses for their guidance in courts of law is admirably expressed. The chapter on Cadaveric Rigidity is clearly discussed, and due attention has been given to the chemical changes in muscle incidental to their stiffened condition.

Speaking of the guaiacum test for blood, the author does not explicitly state the necessary check experiment when filtering paper is used to demonstrate the stain. Some varieties of this paper give a distinct blue reaction with the reagents alone, consequently the latter should be used with and without the object to be tested. Regarding the carbon-monoxide-hæmoglobin spectrum we do not find mention of the fact that it may be readily observed after a considerable lapse of time. In one case it was unimpaired at the end of two months. Criminal responsibility in its relation to insanity is dealt with in a masterly fashion. Space does not permit a lengthy review of each section of Professor Mann's work, but we may say generally that the arrangement of the subjects is good. The diction leaves nothing to be desired. The author marshals his facts in simple but imposing order and draws his deductions with singular skill. The letterpress is bold and distinct. An increase in the number of illustrations is, perhaps, desirable. We can strongly recommend the work to students and practitioners of medicine.

The Human Flower: a Simple Statement of the Physiology of Birth and the Relations of the Sexes. By ELLIS ETHELMER. Third Edition, further enlarged and revised. Mrs. Wostenholme Elmy, Buxton House, Congleton. 1895.

WE are told in the introduction addressed to parents that the purpose of this small treatise is "to give in plain and inoffensive terms a short and simple account of the circumstances attendant upon the birth of human beings into the world." In the opinion of the author, it is so written that it may be "fittingly placed in the hands of sons or daughters at an age when their growing intelligence seeks to know the origin of their being." In order to meet the various ages of readers the first two chapters (says the author) are written "in as simple words as are consistent with accuracy"; and personally the author assures us that he (or perhaps we should say "she") "would not hesitate to entrust the book to a child of however tender years." We live in an age when there is a tendency to regard almost everything as a matter of opinion; and, in the author's opinion, it is a desirable thing to set boys and girls to read such a book as the one before us, in which the male and female organs of generation and their uses are systematically described. We cannot ourselves agree with the author in this matter. There is, no doubt, as is said here, a strong analogy between the reproductive process in plants and animals, or, to be more precise, between the reproductive process in plants and in man. But there is a considerable difference between studying that process in the vegetable kingdom and studying it in man with, as we have said, a precise description of the structure and functions of the organs of generation in man. We can see no objection to the study of botany among young people, girls or boys, and we should think that the analogy between the reproductive process in plants and in the animal kingdom would suggest itself to their minds quite sufficiently. The author, we think, rather loses sight of the enormous differences between plants and human beings, and makes too little allowance for the part played in mankind by the emotions. We can easily imagine that a great deal of harm might result from a boy being set to read the description given of the generative apparatus in the female, and similarly from a young girl being made to read the description of the corresponding organs in the male. Curiosity, and the desire to test the accuracy of the description, might easily occasion much harm—far more, it seems to us, than any good that the knowledge in question would be likely to do to its possessor. We do, in fact, agree with the advice here quoted from Ruskin as to the education of a girl, which appears to us to be the exact opposite of the definite and precise teaching recommended by the author. "Let her *loose* [the italics are ours] in the library, I say, as you would a fawn in a field. It knows the bad weeds twenty times better than you, and the good ones, too, and will eat some bitter and prickly ones, good for it, which you had not the slightest thought were good."

Annals of Ophthalmology and Otology. Vol. IV. January, 1895. No. 1. St. Louis, Missouri: James Parker.

THIS number contains an account of various methods of treating corneal opacities by Dr. David Dennis of Erie, Pennsylvania. He obtained great success by carrying out a plan devised by Dr. Alleman which consists in attaching to the negative pole of a battery, with a current of one-quarter to half a milliampère, a small silver electrode with concave contact surface, in which, for the sake of surer contact, a globule of mercury is made to adhere. The time of contact was about one minute. In one instance the current was alone employed; in others pressure inunctions and yellow oxide of mercury, and in another pressure inunctions alone. Dr. J. Thorington has some sensibly written observations on Skiascopy. Dr. Joseph Willetts discusses the cause of the halo or rainbow symptom in glaucoma, which he attributes to stasis and œdema of the cornea. Dr. John Ball contributes an article on the treatment of traumatic cataract attended by rapid swelling of the lens. He advocates the removal of the lens through a section made with Graefe's knife in the sclero-corneal junction, extending from one-third to two-fifths of the corneal circumference, without iridectomy, and careful removal of the softened lens substance. Mr. Charles Prentice solves a problem in cemented bifocal lenses by the prism diopter. A case of retinitis pigmentosa is reported by Dr. Dunbar Roy of Atlanta, Georgia; one of

fibroma of eyelids by Dr. George Goode of Cincinnati; one of embolism of the inferior branch of the central retinal artery by the same author; one of detachment of the retina by William E. Bruner of Cleveland, Ohio; and there is a paper on the ripening of immature cataract by direct trituration by Dr. Bourne Bettman of Chicago. In the department of otology Dr. Walter Park of Harrisburg, Pennsylvania, describes an interesting case of acute purulent inflammation of the middle ear with two attacks of double optic neuritis, no mastoid complications, frequent delirium, two operations, and recovery; Dr. H. A. Alderton of Brooklyn, New York, gives a careful study of the influence of affections of the upper air tract upon the ear, with numerous statistics; Dr. Otto Koerner of Frankfort-on-Maine contributes the details of a case of tuberculosis of the temporal bone with extension to the adjoining brain; and Dr. Walter Park of Harrisburg, Pennsylvania, has devised a new and more convenient instrument than a Politzer air-bag.

Medical Electricity. By H. LEWIS JONES, M.A., M.D., Medical Officer in charge of the Electrical Department in St. Bartholomew's Hospital. Being the Second Edition of *Medical Electricity*, by W. E. STEAVENSON, M.D., and H. LEWIS JONES, M.D. London: H. K. Lewis. 1895. Price 10*s.* 6*d.*

WE gladly welcome the second edition of this valuable work. Electricity is becoming day by day more generally recognised by members of the medical profession to be an agent of great value for diagnostic as well as therapeutic purposes. Many, however, who are anxious to use it are somewhat hazy as to the various methods of electrification, as to the results they expect or wish for, and as to the management and care of sources of electricity, such as batteries or induction machines, and to all such this book will be of great use. In this second edition the general plan of the first has been adhered to, but some of the early chapters have been simplified, notably by the omission of many recondite mathematical formulæ. The various sources from which electricity can be obtained for medical purposes are very fully set forth. We are glad to see that Dr. Lewis Jones has avoided using the eponymous words galvanism, faradaism, &c., substituting the far better titles currents from cells or from the induction coil. One specially valuable feature in this edition, which was not present in the first, is the set of illustrations representing the appearances in paralysis of various muscles. We may refer especially to Figs. 71 and 72, representing paralysis of the trapezius and serratus magnus respectively. The chapter on Electrolysis and its various applications is very clear and practical, especially with regard to the treatment of nævi. We have no hesitation in recommending this work as most valuable to the busy practitioner: it does not pretend to take the place of the large treatises of Erb and Beard and Rockwell, but as a practical handbook it will be found exceedingly useful.

The Science and Art of Bread-making. By WILLIAM JAGO, F.I.C., F.C.S. London: Simpkin Marshall and Co., Limited. 1895.

IT is only within the last twenty years that the operations concerned in the making of bread have been studied and understood—since, in fact, modern experimental enquiry threw light upon the nature of fermentation, of the action of yeast, and the functions of bacteria. Not the least important aspect of the application of scientific methods is that *pari passu* with the advance of knowledge on the points of manufacture the necessity of cleanliness came to be understood, as well as of the adoption of rigid sanitary principles. The worth of a book of the kind before us is therefore strikingly manifest, and those engaged in the industrial operations with which it most exhaustively and thoroughly deals, and who are interested in the scientific aspect of the question, owe Mr. Jago a tribute of praise and gratitude. It is written within the reach—of the baker's man, we had almost said—but certainly of the master baker, who, if he be not acquainted with the elementary truths of chemistry, and especially those concerned in bread-making, is presented with them in a way which, if he have any intelligence at all, he will easily and eagerly grasp. Thus from introductory principles and a description of the principal chemical elements and their compounds, inorganic and organic, he is brought to understand the composition of wheat and wheat flour, the carbohydrates, the proteids, enzymes, yeast fermentation, &c., until in the sixteenth chapter the subject nearest his interest—bread-making—is admirably treated. This chapter deals specially with matters of primary importance to the practical baker. This is evident when we find it is divided into headings as follows: various bread-making methods, a review of panning fermentation, sour bread, faults in bread, leavened bread, baking powders, flour blending, &c. More or less technical are the chapters which follow on special breads and bread-making processes, bakehouse designs, the machine bakery and its management, till a description of analytical apparatus essential to the examination and valuation of bread leads up to the commercial testing of wheats and flours, and excellent and clearly written chapters on the determination of mineral and fatty matters, of soluble extracts, acidity, proteids, the estimation of carbohydrates, and so forth.

The analysis of bread in particular is summed up in Chapter XXV., and the methods for the detection of adulteration—which happily there is reason to believe is rarely practised now—are given in Chapter XXVI. In the directions for the estimation of sugar the author has probably inadvertently omitted to mention the Pavy modification of Fehling's method, which offers very distinct advantages, since when the reaction is complete the solution becomes clear and colourless, while with the Fehling solution it is difficult to tell the precise point when the whole of the copper is precipitated owing, as not infrequently happens, to the suboxide not separating readily. In some experiments on the effect of "alumed" bread upon digestion the author shows that alum retards proteid digestion to about half the rate which obtains in its absence, and that the use of "alumed" baking powder is as injurious as that of alum alone, so that the evil of a definition which in the Food and Drugs Act does not condemn, according to a notorious and recent decision in the High Courts, the use of alum in baking powder, because it cannot be regarded as a food, is accentuated.

We congratulate the bread-making industry on possessing such a valuable work of reference. The interest of the subject is, however, not theirs alone, and it is evident, from the stock of valuable material with which, as we have indicated, it exhaustively and admirably deals, that analysts, sanitarians, medical men, and others will also gather distinct profit from a perusal of its pages.

CHOLERA.

THE official returns from St. Petersburg show that 51 cases and 19 deaths from cholera occurred in the province of Podolia, and 7827 cases and 3085 deaths in the province of Volhynia during the first fortnight of September. The district of Berditcheff in the government of Kieff is also officially declared to be infected.

Analytical Records
FROM
THE LANCET LABORATORY.

LIEBIG'S EXTRACT OF MEAT COMPANY'S BEEF PEPTONE (EXTRACTUM CARNIS).

(LIEBIG'S EXTRACT OF MEAT COMPANY, 6, FENCHURCH-AVENUE, E.C.)

WE have submitted this meat preparation to a somewhat extended analysis with most excellent results. As will be seen from the figures given below, it presents remarkable dietetic advantages, containing not only the vital principles of beef in a very highly concentrated form, but in an easily assimilable condition. In short, it is a peptonised meat compound in which the nourishing nitrogenous constituents of meat, as albumin, fibrin, &c., have been reduced to a readily digestible state, while the important stimulating principles (chiefly crystalline bases) have also been retained. Its composition, according to our analysis, is as follows: water, 28·02 per cent.; peptoniferous matters, 45·28 per cent. (consisting practically of equal amounts of albumose and true peptone); gelatine, 3·65 per cent.; albumin (coagulated on boiling and on slightly acidifying with acetic acid), 2·00 per cent.; crystalline meat bases, 11·98 per cent.; mineral matter, 9·07 per cent., containing 1·40 parts common salt, 0·07 part phosphate of lime, and 7·60 parts of phosphate of potassium. The total nitrogen amounted to 9·30 per cent. This analysis illustrates the importance of ascertaining in what form the proteids exist in preparations offered as nutrients. A meat preparation may appear to possess, so far as regards its total nitrogen, a high food value, but it might consist chiefly of gelatine, which bears no comparison, of course, in regard to food value with a similar proportion of albumose or peptone containing the same amount of nitrogen. The fact that the above preparation, for example, contains 9·30 per cent. of nitrogen conveys nothing as to its really nutritive character, but when the proteid matters are separated and estimated by chemical methods its worth as a nutrient becomes at once evident. This important aid to the differentiation of the kinds of proteids in peptonised preparations is largely due to the classic and well-known researches of Kühne and Chittenden and others. If reference be made to the above analysis it will be seen, not only what a powerful food this Liebig's new beef peptone is, but that the proteids have been so prepared as to be present under the best conditions for assimilation in the alimentary tract. Quite one half of the extract, in fact, consists of the products of peptonic digestion, while albumin, coagulable on boiling, which, together with water and salts, is able alone to support the vital processes, occurs in important quantity. The presence of a notable proportion of soluble phosphatic constituents is calculated to further add to the beneficial influence of this preparation upon nutrition. It is quite free from the unpleasant taste and odour which have hitherto largely detracted from the administration of peptonised meat compounds by the mouth, and contains no objectionable preservatives. Its composition is founded on an excellent physiological basis, indicating it to possess to an eminent degree all the requirements of a nitrogenous food, which, offering no difficulty to the digestive functions, must contribute very effectively as a nutrient in the repair and maintenance of the body tissues. The presence of a noteworthy proportion of crystalline meat bases adds to its value as a restorative and stimulant.

JEREZCONA WINE.

(HERTZ AND COLLINGWOOD, 4, SUSSEX-PLACE, LEADENHALL-STREET, E.C.)

As might be gathered from the name of this wine, it consists of a well-known mature sherry (of the famous Xeres district) in which the active constituents of cinchona bark are skilfully dissolved. It presents, therefore, real bitter and tonic properties in an agreeable form. That the wine is old and ripe is evident to the palate, the taste being, however, pleasantly and delicately bitter. A definite quantity of the alkaloids of cinchona bark was obtained on alkalising the wine and extracting with ether. These occur combined as hydrobromate, so as to minimise the disagreeable effects produced by ordinary cinchona preparations. The composition of the Jerezcona, apart from its medicinal characters, is indicated in the following analysis. Alcohol, by weight, 14·64 per cent.; by volume, 18·03 per cent.; proof spirit, 31·61 per cent.; extractives, 6·72 per cent.; mineral matters, 0·52 per cent. It is an obvious advance on the usual type of bitters.

1. GOLD PREPARATIONS (LIQ. AURI BROM. ARSENATIS, ETC.). 2. TANNOPUMILINE.

(ARTHUR AND CO., 69, BERNERS-STREET, OXFORD-STREET, W.)

Gold preparations have lately been advanced as remedial agents of distinct value. The bromide of gold, for instance, has been observed to exert a more powerful action on the psychomotor centres than the corresponding potassium salt, although the former contains nearly a fifth less bromine. Excellent results, it is stated, have also followed the use of bromide of gold in scleroses, and still more recently a solution of gold tribromide and of oxybromide of arsenic have been administered with marked benefit in locomotor ataxy. Specimens of "Liq. auri brom. arsenatis," as well as of "Liq. auri brom. arsen. mercuratis," have recently been submitted to us by the above chemists. The former is a combination of tribromide of gold ($AuBr_3$) with oxybromide of arsenic (AsOBr), and the latter contains in addition oxybromide of mercury (3 HgO, $HgBr_2$)—a combination which is said to be a specific for syphilitic tendency, producing, however, less salivation than the simpler mercurial salts. The care needed in order to get stable solutions of gold compounds is well known, and those before us are highly satisfactory in this respect, containing no excess of objectionable menstruum. The pure tribromide has been used, as our readers are aware, in epilepsy.

Tannopumiline is an interesting and apparently true compound of digallic acid with the terpene of the essential oil of pumilio pine. It has been found valuable in the treatment of perspiration of the feet and in dermatitis, for which affections it is declared to be superior to boracic acid and allied remedies. It is employed as a paint for chilblains, chapped hands, &c.; it dries rapidly and leaves a thin protective film. As might be expected, tannopumiline is not miscible with water. We can confidently commend the above preparations, not only on account of their novelty, but because they are prepared with care, are pure, and therefore admirably adapted for the purposes for which they are designed.

THE Canadian Medical Association has appointed the following gentlemen as officers for 1895-96:—President: James Thorburn, Toronto. Vice-Presidents: Prince Edward Island—James Warburton, Charlottetown; Nova Scotia—Wm. Tobin, Halifax; New Brunswick—W. W. White, St. John; Quebec—Hon. D. Marcil, Quebec; Ontario—Fife Fowler, Kingston; Manitoba—H. H. Chown, Winnipeg; North-West Territory—G. Brett, Banff; and British Columbia—R. E. McKechnie, Nanaimo. General Secretary: F. N. G. Starr, Toronto. Local Secretaries: Prince Edward Island—H. D. Johnson, Charlottetown; Nova Scotia—G. C. Jones, Halifax; New Brunswick—Wm. Christie, St. John; Quebec—J. G. McCarthy, Montreal; Ontario—John H. Mathieson, St. Mary's; Manitoba—W. J. Neilson, Winnipeg; North-West Territory—Geo. Macdonald, Calgary; and British Columbia—W. A. Richardson, Victoria. Treasurer: H. B. Small, Ottawa. The meeting in 1896 will be held in Montreal.

THE LANCET.

LONDON: SATURDAY, OCTOBER 12, 1895.

THE general practitioners of the country will be deeply interested in the series of articles which we are publishing headed "The Battle of the Clubs," giving details of a contest which must be fought out, and which, it will be seen, is not confined to our own country. Some time since we gave an account of a similar conflict in Germany. The present series of papers includes our special commissioner's description of a very interesting dispute between the Syndicate of Friendly Societies in Brussels and the medical profession, in the ranks of which there is great unanimity. Syndicates are the order of the day—"the individual withers and the world is more and more." We are of the number who believe greatly in individualism. Every member of the profession is placed occasionally in a position either to honour or to discredit the profession. It is the interest of the profession to have each member so conscious of this responsibility that under no circumstances shall he forget what he owes to the body corporate and to its traditions. He may temporarily suffer, or seem to suffer, in his individual capacity; but in the long run he is certain to gain. This is the point at which individualism and the *esprit de corps* meet, correcting each other's faults and coöperating in great lines of conduct which make ultimately for the good of all concerned. The charge of trades-unionism is one that need not weigh heavily on a body of men like the medical profession. We have never pretended as a profession not to have rules and traditions in which the individual was to be subordinate to the whole. If these rules and traditions have mainly and honourably had reference to questions of conduct they have not excluded questions of charge. Even honoraria are regulated by these same rules and traditions. It would be a grievous surrender of the interests of consulting practice if its junior members were to initiate consultation fees of less than the traditional minimum, which was supposed to be the least on which the dignity of the consultant class could be maintained. But he is almost more culpable who, in the sphere of general practice and for mere selfish reasons, takes an opportunity of profiting by the ungenerous demands of clubs or of private patients to reduce the modest remuneration of those who conduct general practice in its most arduous and exacting forms. No dread of the unreasonable charge of trades-unionism can excuse members of the profession for so acting or exempt them from the duty of denouncing those who so act. It is the privilege of the public and of its poorest members to have, not only medical advice, but the combined action of the profession in earnest consultation when urgency so requires. But there is a corresponding obligation on the part of the public and of those who administer great clubs for medical purposes to realise their obligations to the profession as a whole and to remember that they do not discharge these by beating down to the lowest terms and by "sweating" its youngest and its neediest members.

The articles recording the "Battle of the Clubs" which we are publishing from week to week afford us justification for thinking that the clubs and some of the public who have no claim to cheap attendance are dealing with medical men in a way that is ungenerous and unjust, and for approving of the conduct of the profession in various places when they stigmatise as opportunists those who try to supplant their brethren who are vindicating the just claims of medical service. The shabbiness of clubs is the more unreasonable because it coincides on the one hand with a great improvement in the wages of working men, and on the other with a considerable addition to the cost and length of medical education. The story is practically the same in every place where the state of matters has so far been disclosed—Cork, Brussels, Portsmouth, and Eastbourne. At Brussels there are about 450 medical men in practice, and 430 of them have joined what is called the Medical Syndicate. They have made it clear that their object is not so much to increase their rate of pay, but absolutely to refuse to attend rich men on the same terms as the labouring classes. Acting under the direction of this syndicate, twenty medical men in the service of the united clubs—the "Fédération des Mutualistes"—with exemplary discipline, resigned their posts, but in conformity with the requirements of the same authority continued to attend on grounds of humanity patients who were under treatment when the movement commenced. Eleven medical men took their place, only four of whom have proved effective. One of these was appointed chief medical officer at a high salary. The Medical Syndicate felt bound to disclaim him, and they did so with such completeness and effect that he apologised for his conduct and joined the Medical Syndicate. Our special commissioner wisely points out that in all these disputes it is necessary to appeal from the executive cliques by which the clubs are governed—often composed of the very classes objected to in clubs by the medical profession—to the whole constituency of the clubs—in other words, to public opinion. Working men are not naturally mean or likely to refuse their sympathy to those who are following their own example and making a united stand for proper terms. In his admirable account of the "Battle of the Clubs" at Portsmouth our special commissioner indicates with much clearness the injury to medical practice involved in the wide extension of the club system and in the coincident growth of a spirit of parsimony which, as we have said, is not natural to the mechanics of this country and which is especially unworthy of men whose weekly wages have increased of late years by 10*s.* a week. Formerly clubs were only meant for the accommodation of the bread-winner of the family, who was both willing and able to pay reasonable bills to his medical man for attending his wife and children. This was a far more satisfactory arrangement, not only for the medical man but for the people, who had thus the sense of privacy and independence in their medical relations. But now the demand is that the wives and children shall be attended on

club terms; and at Portsmouth there is a rate of pay which is simply disgraceful. The Portsmouth Dockyard Medical Benefit Society admits infants and juveniles as well as adults at the uniform rate of ½*d*. per week! For this sum, not only the actual attendance of a fully qualified medical man is expected, but all necessary medicines, leeches, dressings, bandages, splints, &c. This seems to us the most discreditable instance of sweating yet disclosed either by the General Medical Council's investigations or those of our commissioner. And unfortunately it is sought to raise it into a model to be imitated by other societies, including the Rechabites, who actually use their temperance as an argument for imposing similar or worse terms on their medical officer. The medical profession must consult its own dignity in regard to such facts. The mere publicity of them should be enough to bring about a reform. If not, the medical men of Portsmouth, who have formed themselves into a union, will have the sympathy of the profession in their claims for the establishment of a reasonable wage limit in clubs and for a more adequate recognition of the value of medical service generally.

The profession at Eastbourne, according to our commissioner, is acting with great ability and public spirit in fighting two medical aid associations which carry on the double business of insurance against sickness and insurance against death. It is found that assurance companies which aim at life insurance on a small scale find it much more easy to procure business when they can include a provision for sickness. Accordingly the profession at Eastbourne has had to encounter two big assurance companies—the Liverpool Victoria Legal Friendly Society and the Prudential Assurance Company—both acting virtually as medical aid associations, both resorting to canvassing, the canvassers being careless as to the exclusion of unfit persons and rather preferring those who can pay larger premiums for life insurance. The result has been a most creditable unanimity of the profession and the creation of the Eastbourne Provident Medical Association, formed by the profession itself and to which all its members are admissible. The staff of the Provident Association consists of nine medical men, while three medical officers of the Prudential Assurance Company have abandoned their connexion with that body and have brought over most of the members to the medical association of the profession. The Prudential office itself seeks to persuade its clients to join the Eastbourne Provident Medical Aid Association. The three officers of the National Medical Aid Company, working with the Liverpool Victoria Legal Friendly Society, have resigned their office and explained to their patients the advantages of joining the Eastbourne Provident Association. Practically the Eastbourne medical men have been rewarded for their firmness and union by victory all along the line. Let these examples of combined action be laid to heart in other places. Our commissioner will continue his researches, and we shall be glad, indeed, if the important articles which he is writing should help to place the claims of the profession in a clearer light before the working classes. We will try to think that he is in error in attributing to them the hardness and ungenerousness which they are so ready to attribute to employers of labour. The medical profession has, and must ever have, strong claims on their respect. It will not act harshly or hastily. But it is determined to act firmly and with self-respect.

AN able writer in one of the monthly magazines draws attention to what he calls the "gaps in evolution." The chief points insisted upon are the absence of any evolutionary doctrine to account for the origin of life, for the mode in which variations arise, for the first beginnings of mind, and for the fact that the actual transition of one species into another has never been proved. We are far from denying that these are weighty points, well worthy of the attention which evolutionists have been the first to bestow upon them, but we demur to the apparent conclusion of the reviewer that they are sufficient to warrant the rejection of evolution as a working hypothesis of the probable method of cosmic development. It is easy to show that there are *lacunæ* in the evolutionary theory which we cannot at present fill up, that much remains unexplained, perhaps inexplicable, and that evolution is still far from precise and complete demonstration. It is not so easy to point to facts that are in any way destructive of the evolutionary hypothesis, or to suggest any alternative doctrine which is not beset with even greater difficulties. Evolution leaves much unexplained—that is admitted; but we question whether there is any single fact in physics or biology which can be definitely regarded as fatally opposed to evolutionary theory, if we were able to take a sufficiently accurate and comprehensive view of all the facts of the case. Let us look at the difficulties suggested by the reviewer. Evolution throws no light on the origin of life. Scientific men hold as certain the axiom *omne vivum ex vivo*. Life as we know it always arises from antecedent life, and to allege that while this is so now, there may have been a time in the history of this planet when the living arose from the not living, is to advance a violent hypothesis contrary to all scientific analogy, and only intended to get rid of a glaring difficulty. We fully admit the force of this reasoning. The various hypotheses—such as the possibility that life might have been introduced to this planet by a meteorite or the like—that have been advanced to meet the difficulty have always struck us as singularly weak. We think it better to admit that the origin of life is from the scientific point of view an insoluble mystery—as insoluble as the origin of matter or of force; but we fail to understand how the admission of this difficulty is fatal to evolution. If evolution cannot explain the origin of life, what theory can? Is the doctrine of special creation, or whatever be the competing theory with evolution, in any better position? The assumption that life never began, but is eternal, is beset with greater difficulties than any that encompass evolution. Life as we know it always arises from antecedent life—in other words, we have no *scientific* ground for believing in life without origin and without cause. Such a doctrine is, we need not say, quite tenable by the theologian, but he cannot justify it on scientific grounds, and if he is wise he will not try to do so. The origin of life remains a mystery, but if the evolutionist is dumb before that mystery his antagonist is dumb too, and deludes himself with a mere play of words in lieu of an explanation.

Again, it is argued that the mode in which variations

arise—their apparently lawless and arbitrary character—is fatal to any orderly and satisfactory doctrine of evolution. Nature seizes on beneficial variations and perpetuates them, while she suppresses those variations that are harmful; but whence arise the variations? This objection does not strike us as very formidable. Granted that we cannot satisfactorily account for individual variations, it seems by no means impossible to conceive a satisfactory theory of the general method of variation. Atavism probably accounts for a great deal. We must take a comprehensive view of the evolutionary series, remembering that qualities, physical or mental, may remain latent for one or more generations, reappearing later in the stream of descent, and that therefore we have no right to be surprised at some characteristic arising that is not obviously derivable from the immediate ancestors. What is apparently inexplicable might be capable of an easy and obvious explanation if we could take a sufficiently comprehensive view of the facts. How naturally and easily some of the most mysterious phenomena of variation—such as reversion—fall into the ordered scheme of evolution when once we have got the proper clue. Thus it happens that facts, apparently most difficult of reconciliation with evolution, become, with fuller knowledge, the strongest proofs of the general accuracy of the theory. We need not dwell on the objection that there is no positive proof of the actual transition of one species into another. It may be fairly held that such proof is, *ex hypothesi*, impossible. The immense time probably required to effect specific changes and the almost inconceivable complexity of the phenomena render any precise demonstration impossible. All that the evolutionist may be fairly expected to show is that there are facts and analogies to prove that such a transition is possible, that it would account for a multitude of facts at present inexplicable, and that the distribution of species on the globe has undergone wide changes within geological times. All this has, we think, been fully effected. Whatever changes may pass over the doctrine of evolution—and we are probably still far from finality—DARWIN'S epoch-making work has destroyed for all time the old ideas on the permanence of species. Let us glance at the last objection—viz., that evolution throws no light on the origin of mind. We grant this most fully; but again we must insist that no other doctrine is a whit better off, and that the origin of mind, like the origin of life or the origin of matter, remains an insoluble mystery. There seems in the minds of many thinkers an idea that evolution is bound to hold the development of the living from the not living and the conscious from the unconscious. This is a radical error. The evolutionist, as such, has no opinion as to what was the original something from which all things have been developed. His concern is strictly with processes rather than origins. He is quite free to believe in an Eternal Mind or an Eternal Matter, or in both; but such beliefs are quite outside the range of science. They belong to theology, with which we have here nothing to do.

Opponents of evolution may fairly be asked not to confine their attention to admitted difficulties or to mysteries which are just as mysterious to the non-evolutionist as to the evolutionist, but to consider calmly the flood of light which the evolutionary hypothesis has cast upon the whole field of biology, to have regard to the immense mass of fact of which evolution affords at least a tenable and conceivable explanation, to consider the indirect evidence in its favour afforded by such phenomena as those of embryology, and to say whether it is not beyond comparison the most far-reaching and fruitful hypothesis ever conceived by science.

Two recent cases have directed popular attention to one of the most mysterious results of altered cerebral function—an absolute loss of that which is called "memory." The symptom is so striking, so conspicuous, and so simple, that it is natural for it to attract attention, and natural, also, that it should seem to be, in some way, susceptible of explanation. But, in truth, it is one of the derangements which bring into prominence the cerebral function of which we know perhaps less than we do of any other. There are two elements of the process which is included in the term "memory." They are generally confused, although one is often distinguished as "recollection." That which we call "recollection" is the voluntary use of memory; and it is the power of the will over memory, and not memory itself, which is lost in such cases as those which have recently attracted attention, and of which instances are familiar enough in medical science.

The physical basis of memory rests on the fact that every functional state of the brain leaves behind it a residual condition, in consequence of which that precise condition, in the same degree and the same combination, is more readily reproduced. The tendency for the state to occur again is the greater the more frequently it has previously occurred. It is this law which of course underlies all physical education, as well as all memory, commonly so termed. The occurrence of special nerve processes in association with each other leaves behind a tendency for the recurrence of the association, so that one "idea" causes the revival of another. The physiologist and the physician are mainly concerned only with the physical processes in the brain which correspond to and accompany the mental processes, with which they, as physicians or "physical physiologists" have less to do. But with these is combined the influence of revival of past activity, which is itself subject to the determining power which we call the "will." This association has baffled, and must apparently for ever baffle, our scrutiny. It is far beyond the range through which science can penetrate. We know of its workings by subjective facts on the one hand, and on the other by its effects. Among these effects is the susceptibility of the renewal of past brain processes to the will. We can voluntarily recall the impressions of the past, we can induce the same combinations of nerve action, but how we know not. True failure of "memory" can only be assumed in the cases in which there is a general depreciation of the cerebral functions. In consequence of impaired nutrition of the brain, the functional states do not leave the due residual effect which facilitates their revival. The change may be compared to the difference in the depth and in the permanence of the furrow in soils of different cohesion when the ploughshare cuts into them. On sand, for instance, as a much-quoted phrase reminds us, the ploughshare, instead of leaving a permanent furrow along which it can, if necessary, easily

glide again, makes only a slight depression, almost at once filled up by the non-coherent particles from the crests. Such failure of memory is seen in old age, in general degenerations of the brain tissue, and also, in a striking way, in some cases of cerebral anæmia. In profound deficiency of the blood, qualitative or quantitative, the state of the brain may be such that no mental impression leaves an enduring trace such as can permit its reproduction. In such conditions there is a true failure of memory. But we cannot assume that this is the case when there is only a simple loss of the power to revive past impressions by the will, such as occurs as the result of sudden local disease, or sudden injury. A severe concussion may be followed by a period during which there is unconscioness, and afterwards by a return of an apparently normal mental state. Everything up to the moment of the accident may be recollected, but everything afterwards may be an absolute blank. Even if the sufferer soon regains consciousness and appears to be in normal mental vigour, the residual states left by his mental processes are not within the power of will to recall. Such sudden change, probably in some cases at least a sudden local lesion, limits the power of the will in a curious way. The will can induce the revival only of those processes which occurred a long time previous to the alteration. It is a well-known fact that the earlier in life cerebral processes occur the more easily are they revived. After middle life the difference in the intensity of the residual states, or perhaps some difference in their relation to the mysterious influence of the will, makes them so much less amenable that such a sudden alteration, as may be caused by a local lesion, will withdraw them from the influence of volition. This can scarcely be spoken of as true loss of memory: it is loss of voluntary recollection, and that is all we can say.

Strange, indeed, is the apparent slightness of the cerebral influence which like a gearing apparatus keeps within the power of the will these residual states. Who does not know how a vivid dream may be recalled by some chance incident, revealing that an apparently dreamless night was filled with activity. In the curious brain state which follows a slight epileptic fit, in the state of "automatism," as it is termed, residual states must be produced as definite and as deep as any which occur in normal conditions, but they are beyond the power of the will and of any association to reproduce them. In a case recorded by Dr. GOWERS a carman drove his van across London, steering his way with precision through the crowded streets, and then suddenly found himself six miles distant from his destination. During the hour which had elapsed innumerable incidents must have left impressions deep enough to have enabled them to be reproduced at once by a voluntary effort, were it not for the sudden breaks in the continuity of consciousness which occurred—first, when he, as the saying is, "lost himself," and secondly, when he "came to himself." Rarely, in some like state at a subsequent period, the connexion with the past may be re-established. As a rule, in this morbid state, the missing link in the mechanism of voluntary recollection is never re-established. But it is otherwise when there is a sudden loss of the power of the will over the residual states produced under normal conditions, but which have been separated from volition by some sudden change. In such cases as those which have been discussed so much of late in the daily press, the residual states are there, and, at some link in the chain of association which exists between them, a renewal of the lost influence may occur, and may then quickly spread through the whole series; the memory may suddenly give signs, quickly increasing, of returning susceptibility to the will, which we call the power of recollection—a word which seems so simple, and yet denotes the greatest mystery of brain and mind.

Annotations.

"Ne quid nimis."

THE EAST LONDON WATER INQUIRY.

THE proceedings of this inquiry terminated last Saturday, when Mr. Pember, Q.C., addressed the Commissioners on behalf of the water company, and Mr. Balfour Browne, Q.C., replied on behalf of the East-end vestries. On the whole, the evidence contains but few facts that were not previously known or had not been published in the daily press. The position is much the same as it was. Briefly summarised it is as follows. Consequently on a severe and unusually prolonged drought the East London Water Company's storage reservoirs were reduced to such a serious extent that the company was compelled to limit the output of water. Had they not done so it is probable that the reservoirs would have run quite dry, and they were abstracting as much as could be taken from the River Lea without seriously affecting navigation. The result of this intermittent supply was to deprive all those consumers who were not provided with cisterns or other means of storage of a supply of water for the greater part of the day. It was stated that little or no inconvenience was experienced by those consumers who had cisterns in their houses, and that a 50-gallon cistern would have filled at the worst time of the drought in a quarter of an hour. The situation is much simplified by the admission of the company's own officials of two things—firstly, scarcity of water through an unusually dry season (which they, however, claim would not have happened if the London County Council had not blocked their proposals to extend their storage capacity some years ago); and, secondly, that if cisterns had not been abolished there would have been little inconvenience from the constant supply being made intermittent. In short, the causes which were responsible for the scarcity of water, both at the source of supply and at the house of the consumer, were one and the same—inadequate means of storage. The shortness of supply being due to the mains having been made defective by frost, as alleged by the County Council's engineer, seems improbable. One of two courses, it seems to us, therefore, is open to London if her inhabitants are to possess an adequate supply of water in the future under any abnormal circumstances whatever. That the present arrangements are not adequate under a stress of conditions has been demonstrated pretty clearly, but this could be remedied by increased provision for storage in the case of present resources and the existing system of supply. The alternate course is to draw water from other sources, which, as in the case of Wales, could be relied upon to serve a supply at all times without stint and certainly without the possibility of taint. The adoption of the former course, however, at its best can only be considered as so much temporary patchwork of a serious defect, while the latter would undoubtedly solve

the difficulty most satisfactorily if we exclude the question of the enormous cost which it must needs involve. We can easily imagine that this will be the substance of the report of the Commissioners of the recent inquiry, who, however, have not yet finished their task, inasmuch as they are making arrangements to visit the company's works and to inspect the private fittings in the consumers' houses during the present week. Their report will be awaited with unusual interest.

THE BRITISH MEDICAL ASSOCIATION AND THE MEDICAL SERVICES IN INDIA.

WE have received a number of communications from medical officers and members of the medical profession practising in India, as well as cuttings from various journals published in that country, regarding the action taken in the Public Health Section of the British Medical Association at their late meeting in respect more especially of the Indian Medical Service and the alleged utter inadequacy of the present sanitary administration of the Government of India. These communications emanate from officers and others of different ranks in various parts of India, and also in this country, and are of various lengths; but they all agree in protesting, more or less strongly and indignantly, against the statements which have been put forward, and in alleging that the picture which has been drawn, instead of being an accurate representation of the facts, is rather a caricature, unjust alike to the Indian Government and its medical services and to the profession generally in India. We have deemed it best, on the whole, and after careful consideration, not to publish the letters addressed to us. In the first place THE LANCET is in no way responsible for the repudiated statements; and in the second place we have made it a general rule not to publish contributions attacking other journals or affecting individuals connected with them for various reasons, the principal one being that their publication in THE LANCET might give rise to misconstruction and be attributed perhaps to an antagonistic spirit or to some unworthy motive or other. Moreover, on the present occasion the length of some of the communications, and the references to statements that have appeared elsewhere, introduce difficulties of a prohibitive kind. We have been led to make the foregoing remarks by way of apology for what might otherwise seem an apparent want of courtesy to various contributors for whom we entertain the highest respect. If we may be allowed to offer a suggestion as to the proper course to be adopted, it would be that our correspondents should address their communications or representations on the subject to the President of the British Medical Association.

THE DANGERS OF CYCLING.

THERE can be no manner of doubt that cycle riding has become popular with all classes, and, practised with moderation and within certain limits, no form of exercise can be more helpful in promoting a healthy balance of mind and body. The passion for propelling the body on wheels dates from the second decade of the present century, when the beaux of the West-end developed a predilection for dangling their legs from the hobby-horse. In 1846 a machine was constructed on which the rider balanced himself with his feet removed from the ground, and the "bone-shaker," the "ordinary," and its modified form the "Kangaroo" followed. But from no point of view were any of these machines satisfactory. It was not until the year 1885 that a really satisfactory machine, constructed upon rational principles, was introduced, and became the model upon which the most popular machines have since been constructed. Many improvements have, however, been made upon the old model, and wheeling has become popular with both sexes, with old and young, with the rich and, we may even add, the poor. Another cause of its popularity is, perhaps, the patronage given to cycling by many of the Royal family. In the popularity of the exercise, however, there lies a danger, and many of the accidents that occur might easily be avoided if the exercise were not indulged in so recklessly. Within the last few days there has been a series of deaths consequent upon cycle riding. In one case a child aged eleven years fell from a machine which he had hired and which he was incompetent to ride; in another case a man who had passed middle age collided with a van and fell under the wheels of the vehicle; and a minister and a well-known entomologist in America lost their lives from bicycle falls. With regard to children who hire bicycles the person who lets them out for hire should be held responsible if an accident occurs. We have often wondered that accidents from this cause do not happen more frequently. In poor neighbourhoods, especially on Saturday afternoons and Sunday mornings, lads of quite a tender age can be seen executing the most intricate and complicated patterns in the streets and roads, showing their utter inability to manage their machines. In the case of those of maturer years the responsibility rests with themselves, and those who have passed the prime of life should avoid as far as possible any endeavour to thread the intricate maze of vehicles in the main streets of our large cities; for, apart from the danger of loss of presence of mind, or of "side slip" when riding a "pneumatic" on slippery roads—a prolific source of accidents—the nervous strain which is set up is not at all conducive to health.

SMOKING IN COAL MINES.

THE evil wrought by want of thought, though not less injurious, may sometimes be more excusable than that which is done of set purpose. Not always, however, for there are instances in which the very omission implies a defect of will which is in a manner wilful. Among these may be reckoned such an example of heedless perversity as that which cost the lives of thirteen colliers last April in the Quarter Colliery, Stirlingshire. The cause of this catastrophe, as explained in the Board of Trade report, was the careless rather than thoughtless habit still prevalent among miners of smoking while underground. There could not have been here a question of ignorance. Working miners in our day are fully conscious of the grave risk incurred—nay, invited—by this mischievous custom. It is certainly no apology to plead the force of temptation. Men in other callings are constantly compelled by reasons of policy, which are far less cogent than the known claim of duty in respect of a neighbour's life, to smoke at set times and places, and at no other. It implies no hardship that the pit-worker should be made to do likewise. Neither does the alleged greater safety of Scotch mines, inasmuch as they are less liable to the explosion of firedamp, constitute a valid excuse. Gas, as is now well known, is not the only explosive medium. The mixture of air and finely divided coal dust suspended in it, which exists in every mine, provides in full measure the factors necessary to the production of this dangerous atmosphere. The best subterranean ventilation, the greatest skill in lamp construction, will do little to secure the workman's safety unless he be himself sufficiently alive to his own and his neighbour's danger to subordinate a desire the indulgence of which is criminal to the clearly recognised claims of mutual duty. Smoking underground is no more permissible than smoking near a powder magazine or a store of dynamite. The offence is in every case identical. Prevention, it is evident, is the sole remedy for its ruinous consequences, and this fact ought to be kept in view throughout the whole course of the miner's education and employment.

Even boyhood and school time are not too early to sow the seeds of precaution. Unions and like agencies at a later stage must use their influence to the same purpose and must at every possible occasion insist on the duty of abstinence from smoking, and, if needful, institute penalties. A daily search at the pit-mouth, and the temporary suspension of delinquents if detected smuggling matches or smoking materials, would be entirely reasonable deterrent measures. It must be evident that the danger to be met in this case is vital. Its prevention is of much deeper interest to the men than to any master, and any concession to personal liberty or option in regard to such a matter would be as idle as pernicious.

THE BATTLE OF THE CLUBS AT PORTSMOUTH.

IN an article by our special commissioner, published on Sept. 21st, mention was made of a branch of the Oddfellows Society which was proposing to admit to insurance benefits children of both sexes from the age of three months. We have received information that the proposition has been carried, and that the remuneration proposed is 2*s*. 6*d*. per annum for infants from three months to three years, and 2*s*. from three years to eighteen years in the case of boys, and to fifteen years in the case of girls. The medical officer attached to this body has accordingly resigned, owing to the increase of work without adequate remuneration which these conditions would impose upon him. Now, every member of the profession practising in the borough of Portsmouth has signed a pledge that he will not take any appointment to a friendly society vacated by reason of an increase of duties placed upon the medical officer. So it is evident that the offending society will get no local man to take the post, and we would earnestly adjure any member of the profession throughout the country who might be tempted to apply for the vacant post through seeing it advertised not to do so. The cry for "a living wage" and "a fair day's wage for a fair day's work" is all very well; but if it is to be carried out it must apply to all workers without exception. We should like to see any builder or plumber undertake to keep an ordinary house in repair for 2*s*. 6*d*. a year, finding his own tools and materials; and a baby is even more likely to go wrong than a modern house.

THE DAIRY SHOW.

AMONG the many exhibitions and shows which take place at the Royal Agricultural Hall, Islington, the Dairy Show, held under the auspices of the British Dairy Farmers' Association, of which the Prince of Wales is patron and the Earl of Derby president, is one of the most useful. Economical methods of preparing dairy produce are eminently desirable, both from the point of view of the consumer and the producer, and the ever-increasing number of exhibits at this Show is evidence that energy in this direction is not wanting. The exhibition of table poultry, showing the most improved methods of trussing, boning, and scraping for the market, gives evidence of attention to cleanliness as well as expedition, and the improvements in butter making are interesting to everyone. Among the new inventions exhibited is the Thistle Mechanical Milking Machine, by which a number of cows can be milked simultaneously. The apparatus consists of a rubber cup applied to each teat, from which the milk is drawn by a pump having an intermittent action imitating as far as possible that of a calf's mouth. The Radiator Butter-Maker, a combined skimmer and churn for producing Pasteurised butter automatically direct from the milk, is another novelty which will attract some attention, as will also the calf-rearing appliance and the various separators, coolers, &c., used in the economy of the dairy. Quite a new feature in the Show is the introduction of plans and models of dairies. The proper construction of buildings in which articles of food are prepared is as important as the quality of the articles themselves, and ventilation, drainage, and cleanliness are points which have too long been neglected. Some very good plans and models are shown, but there is considerable room for improvement; and it is to be hoped that the valuable prizes offered on this occasion by Sir James Blyth will stimulate designers to further endeavours in the sanitary construction of dairies. The Dairy Show, which closes to-day (Friday), is perhaps one of the most successful that has been held since the inception of these exhibitions nineteen years ago.

INTEMPERATE TEMPERANCE.

MR. JOSEPH MALINS of Birmingham has done his best to give an air of fanaticism to the recent National Temperance Congress at Chester. The Mayor of Chester had invited upwards of a thousand people to an "At home" to meet the Bishop of London and Sir Benjamin Ward Richardson. Not one-half of the guests were teetotalers. But the Mayor of Chester so far regarded the feelings of his principal guests as to supply abundance of non-alcoholic drinks. The only alcohol given was in the form of claret cup. But this was too much for Mr. Malins, and he condemned it at a public meeting, saying he hoped it would be the last time such an error of judgment should occur. Mr. Malins evidently thinks it his duty to judge the world, and feels himself quite equal to the function. A wiser and more gracious man would have thanked the Mayor for meeting them half-way and wished him God-speed the other half. This intemperance of teetotalers is hindering the temperance of the nation.

"VICARIOUS PHILANTHROPY."

SIR HENRY H. HOWORTH'S letters to the daily press are often interesting, though rarely dealing with questions of a medical character. But in his letter on the above subject he permits himself a reference to what he calls the "failure" of the movement for a memorial to Sir Andrew Clark, and especially to a letter from Mr. Gladstone to the *Weekly Sun* recommending an application to every medical man in Great Britain for a small subscription. Sir Henry Howorth protests against the incessant appeal for subscriptions to reward or glorify obscure people. He admits that Sir Andrew Clark was not an obscure person, but "he was certainly not a dramatic personage nor a particularly notable figure in the history of medicine." "To appeal to poverty-stricken medical men for a memorial to a successful physician, who left a great fortune and lived on velvet, is an example," says Sir Henry Howorth, "of the pernicious habit I am referring to." This is not a fair description of Sir Andrew Clark. He did not "live on velvet," whatever that may mean, and he was one of the hardest-working, most public-spirited, and effective physicians of recent years, in spite of the fact that he did not add so strikingly as some physicians to our knowledge, either of pathology or therapeutics. There is some reason in Sir Henry Howorth's protest, and even in its application to the methods advocated for the promotion of the memorial to Sir Andrew Clark. Mr. Gladstone's address at the beginning of the movement was one of the most gracious tributes to the profession, as well as to one of its leading members, which has ever been uttered, and the profession will not cease to be grateful to Mr. Gladstone, who spoke when he was not well enough to stand. But we agree with Sir Henry Howorth that the personal application to each member of the profession would be a mistake. The very beauty of such memorials is that they be unforced and spontaneous. We deny, however, that the memorial has been a failure. Mr. Gladstone's speech remains, and a sum of over £3000 has been raised from cheerful

givers. The mistake was in linking such an object to ordinary and prosaic purposes, and in associating too extensively with one institution, however deserving, a movement which should have been broad in its basis and in its application as Sir Andrew Clark himself was broad. It is perhaps now too late to give breadth to the movement. But we deny that it has been a failure. In this age of incessant and multifarious demands £3000 is not a mean sum to raise for such a purpose.

SYPHILITIC HÆMATOMA.

IN the *Deutsche Medicinische Wochenschrift* Dr. Hahn has published the particulars of a case of this rare affection of the dura mater. The patient was a man aged thirty-six, who had had syphilis about ten years before the onset of his nervous symptoms. These began with attacks of giddiness and severe headache, while his character underwent a great change. He finally had an attack of giddiness with loss of consciousness, and on the following day it was noticed that there was slight left ptosis, deviation of the tongue to the left on protrusion, deficient movements of the palate, indistinct articulation, and exaggerated reflexes. A few days later the following symptoms were also observed—viz., weakness of the right hand, diminution in the reflexes (especially of the knee-jerk on the right side), slight sensory disturbance, and impairment of hearing. He died about two weeks later comatose, having had previously some irregularity of breathing. At the necropsy it was found that over the whole of the left hemisphere, between the dura mater and pia mater, there was a thick layer of blood-clot; while on the right the dura mater was smooth, the pia mater being thickened and the convolutions flattened. At the base the pia mater was thickened, as well as in the Sylvian fissure, while the basilar and the carotid arteries were atheromatous. The left third nerve was flattened and apparently destroyed.

"THE GRIMSBY CHOLERA SCARE"—SO CALLED.

THE town council of Grimsby have decided, notwithstanding numerous protests to the contrary, to appoint a committee "to ascertain, if possible, who was responsible for the publication of the recent unfortunate scare in Grimsby"; and it is clear that the resolution is largely aimed at the medical profession and the press. The action is particularly ill-advised, for no one who knows the details of the Grimsby cholera outbreak in 1893 can do otherwise than feel that, had the town council been more open in admitting the existence of a disease which they could not distinguish from cholera, and which so alarmed those who knew the secret that they had the dead buried in lime, it would have been much better for Grimsby and for the country as a whole. When, after the visit of one of the inspectors of the Local Government Board, cholera was announced, it was too late to stamp it out. Then, as regards this year's experience, it is possibly permissible to say that there has been no cholera in Grimsby; but it is equally certain that clinically it was as impossible to distinguish the cases from cholera as it was during the early stages of true cholera in 1893. And, in view of the cesspits along the lines of the drains, by which soakage of filth into the soil in 1893 was not only favoured but practically ensured, there were many who quite anticipated a recurrence of cholera in that town. Were it not for the fact that much reliance is now being placed on the bacteriological test, no one would have doubted that there was a recrudescence of cholera in Grimsby on a small scale this year; and even some who esteem the bacteriological test most highly would by no means set aside the clinical history and the general antecedents merely because at one period of the disease Koch's comma bacillus did not happen to be found. We cannot but think that Grimsby got off very easily, by reason of the judgment as to the nature of their cases being determined almost solely, if not quite so, on the bacteriological basis. One thing, however, is certain—namely, that in view of the past history of Grimsby, and the chances of a recrudescence during the late exceptional season, the medical profession and the medical officer of health would have been very remiss if they had ignored the clinical indications of the fatal choleraic disease with which Grimsby was visited. And the town council would probably have been the first to blame them if, by chance, the bacteriological report had turned out otherwise or if the disease had continued to spread. One member of the town council urged that the rumour of last autumn had a commercial aspect. We cannot help thinking that the commercial aspect has had much more to do with the attempt to keep things quiet than it has with notifications and reports to the central government. There was everything this year to justify the notification of cases of cholera, and the occurrence of the rapidly fatal attacks in adults which took place in Grimsby amounted to "an outbreak of a dangerous disorder," such as every medical officer of health is bound to report to the Local Government Board.

"THE OLD MISSIONARY."

WE need make no apology for calling our readers' attention to a charming little work with the above title by Sir William W. Hunter. The old missionary was a medical missionary as well as a very wise and benevolent gentleman of large views and simple tastes, the pathos and unostentatious heroism of whose life consisted, to our minds, in its fruitless toil to attain the objects he had at heart, and in the sense of solitariness which falls to the lot of so many earnest and unassuming men of elevated character. There are many other interesting persons besides the old missionary in the book, and these, as well as the scenes of their labours, must have had some basis of real existence in the experience of their delineator. Those who know India and Indian life, its sorrows and joys, will have their associations touched and their memories awakened by the author's truthful description of scenes and his tender references to the little incidents of European life in India—mostly sad, but with a charm of their own withal, which none of us can, and most of us would not care to, obliterate altogether even if we could.

SANITARY EDUCATION.

IT is a healthy sign that workmen whose business it is to construct our dwellings are themselves beginning to see that it is not only to the advantage of the public in general that the work should be done in a way which sanitary science directs, but that it is to their own advantage that a stop should be put to all those practices which may be summed up in the phrase "jerry built." Among the first to have seen this is the master plumber, who, however willing he may be to do his work in a manner satisfactory to himself and to the public, is often handicapped by the fact that materials bought in the cheapest market are frequently supplied to him by the builder or the architect; and, however skilful the workman may be, the nature of the materials supplied preclude him from doing good work. It is he, however, who generally gets the blame if anything goes wrong; and we are glad to note that the National Association of Master Plumbers, which is making great progress throughout the country, has just formed a metropolitan branch of this association. Among the objects of the association are the raising of the status of the plumbing trade in the country, the prevention of contract work being done at unremunerative prices, and the confining of plumbers'

work to plumbers. This last object is a very desirable one, for year by year our knowledge of sanitary principles is widened and the difficulty of the workman to keep pace with it increased. In London not a little has been done by the Sanitary Institute in this connexion, and the sanitary lectures delivered in various parts of the country are generally well appreciated by those whom they are intended to benefit. At Birmingham at the present time Dr. Bostock Hill is delivering a series of lectures on sanitary science at the Birmingham Municipal Technical School designed to impart a practical knowledge of the scientific principles of hygiene to sanitary engineers, builders, plumbers, and others engaged in house construction. Then again, besides the technical lectures for craftsmen, the numerous polytechnic and other institutes give courses of lectures on health science of a more popular character. These, however, which do not receive the attention they deserve, form an important factor in familiarising the general public with the principles of hygiene; and it is the education of the general public in these matters which, after all, must have the greatest influence in bringing about that hygienic millennium which is the ideal of every sanitarian.

RETIRED ARMY MEDICAL OFFICERS.

DEATH has been busy of late in the retired ranks of the Army Medical Department. Surgeon-General J. Irvine, Honorary Physician to the Queen, an officer who had seen much service during the Indian Mutiny, passed away on the 21st ult. at his residence at South Kensington, at the age of sixty-seven, just before the occasion of the commemoration of the thirty-eighth anniversary of the relief of Lucknow, in which he took part. Surgeon-General H. H. Massy, C.B., who died at Bournemouth on the 27th ult., at the age of seventy-five, had served in the Sutlej campaign, in the Crimean war, at the battles of the Alma, Balaclava, Inkerman, and Tchernaya, and other actions, and subsequently in the Indian Mutiny; and last in the list, but by no means least, Surgeon-General Sir Thomas Longmore, C.B., an obituary notice of whom will be found on another page, died on the 1st inst. at the age of seventy-nine. He served throughout the Crimean campaign, from its commencement until the termination of the siege of Sebastopol, without being absent from duty a single day, and subsequently in Bengal during the Mutiny. The services of these three medical officers make up altogether a very distinguished record.

THE "IONA" DISASTER.

BEFORE the sad impression created by the lamentable occurrence on board the steamer *Iona* altogether passes away, it may be well to make a few remarks on the subject and on the finding of the coroner's jury, which, we may add, does not strike us as by any means exemplifying the wisdom of the wise. We must say, in justice to the captain, that our study of the evidence leads us to infer that he acted promptly and judiciously and did his best under the unfortunate circumstances. As to the alleged anxiety which was said to have been evinced about the safety of the ship, the captain and crew of the *Iona* would simply have been culpably negligent if they had not at once concentrated their efforts in trying to secure this, for it meant the safety of everybody on board. The loss of life was bad enough as it was; but if the fire had spread, and it was rapidly spreading, the lives of all on board would most probably have been sacrificed. The great thing to be avoided, as everyone knows, on the occasion of a fire is panic, and the ringing of an alarm bell is, we should think, about the best possible way of creating it. It must be remembered, too, that a ship is, after all, a ship and not really a big floating hotel; but even were it a house on shore we should like to know whether a bedroom is usually provided with separate means of ingress and egress, as it was suggested should in future be the case with cabins in passenger ships. It seems that the passengers were warned in time for them to have escaped, but they were unfortunately not sufficiently impressed with the urgency of the danger and lost time in staying, poor creatures, to dress themselves. Even the heroic stewardess, whose life was sacrificed, did not appear to have realised the pressing urgency that existed. The jury were unanimously of opinion that the fire originated in the lamp-room, and they were probably right; but it was, after all, a matter of conjecture and opinion only. One of the main points connected with fires on shipboard that has to be guarded against is, as we have said, panic. The establishment of a system of "fire quarters" and periodical drill in connexion therewith will do much in this respect. A fire drill teaches all how to act, where to go, and what to do should the necessity really arise.

SCHOOL BOOKS AND INFECTIOUS DISEASE.

WE have from time to time referred to the risks that may be incurred by the reissue at a public library of books returned from infected houses, and it is certain that at the present time there are many medical officers of health who are taking steps towards the mitigation of these risks by notification to the librarian of the infected houses and by a disinfection of the infected books. Dr. Niven of Manchester, in his annual report for 1894, draws attention to the fact that in many schools the books used by the children are collected together into one room at the end of the day and redistributed indiscriminately on the following day without regard to the possible conveyance of infection by such means. It follows from this that a child with the initial symptoms of diphtheria or scarlet fever may have used a book on one day which on the day following may be used by a healthy child. This is certainly a risk which school managers will do well to consider, as also is the question of the separation of children's overclothing in the lobby. It would be well, too, in the same sense, to have regard to the redistribution of slates and pencils, and to the use of towels in the lavatories.

HYPNOTIC FRAUDS AND PUBLIC CREDULITY.

IT is characteristic of conspiracy that it tends to spontaneous disruption. Whether we deal with great or small combinations of this kind, with the quasi-sublime or with the ridiculous in imposture, the result is the same. A quarrel or a bribe may at any time introduce the thin end of the wedge, and the further work of cleavage is only a question of time. It is usually to the public advantage when offenders thus break with each other, and a degree of satisfaction on the part of outsiders is at such times only natural. Sometimes, however, this feeling is tempered by a touch of pity, as in a case recently examined in the Southport police-court. A youth eighteen years of age was charged with sleeping out of doors. He defended himself on the plea that his master, a professional hypnotist, had refused to pay him his wages. Some remarkable statements which followed throw a light on the kind of relations which exist between the hypnotist magician and his media. According to his own admissions the sufferings of this unfortunate "subject" were not imaginary. The art of the master juggler did not extend to the abolition of sensation. A pretended trance in which he lay for three days with his mouth stitched up was to the boy a period of wakeful and doubtless of painful sensibility, and we may safely conclude that certain injuries inflicted upon him at other times were likewise unrelieved by the anæsthesia of suggestion. The folly of

enduring—the morbid and culpable folly of encouraging—these miserable impostures ought to require no demonstration. Their exposure in this instance will, it is to be hoped, have some influence in weaning the minds of a credulous public from the attraction of a species of fraud to which it is far too ready to expose itself. We will not deny the strict justice of leaving the knave and his willing dupes in cases of this kind to live on one another and to find each other out. Still, this admission does not absolve us, as humane beings, of a certain social responsibility in the matter. Where the effect of the imposture implies no great personal detriment it may be allowed to work its own cure. Where, on the other hand, persons like the youth above mentioned are comparatively incapable of self-defence and are liable to somewhat serious injury, it will be generally admitted that some form of official supervision, and even at times of interference, is called for.

TYPHOID FEVER IN SUNDERLAND.

MR. T. W. THOMPSON, Inspector of the Local Government Board, has opened an inquiry into the sanitary condition of Sunderland, with especial reference to the fatal prevalence of typhoid fever. This is now on the decline, but the number of cases has been considerable. In the week ending Aug. 10th there were 14 cases; the 17th, 10; the 24th, 13; the 31st, 57; Sept. 7th, 104; the 14th, 105; the 21st, 95; the 28th, 70. The mortality of the town has placed it very unfavourably in the list of the large towns of England. The Mayor in his remarks on the occasion of Mr. Thompson's first visit seemed to find comfort in saying that the high death-rate of the borough was chiefly due to the great mortality from diarrhœa among children under three. But to the initiated this is as little creditable as the recurring epidemic of typhoid fever, and indeed has much the same significance. There is much difference of opinion as to the exact causes of the epidemic, the prevailing one attributing it to the ashpit system for the removal of refuse which is common. Mr. Thompson is making preparations for a very thorough investigation, the impartiality of which will go far to adjust the acute differences which divide the council on the subject, owners of property blaming parents and tenants for negligence and carelessness, others throwing the onus on the owners of property, which, it is contended, is fundamentally defective in a sanitary respect.

MORBID ANATOMY OF INFANTILE PARALYSIS.

IN the recently published number of *Brain* a full description is given by Dr. Trevelyan of the condition of the different structures of the spinal cord in a case of this disease, in which death occurred from independent causes eleven months after the onset of the paralysis. The patient was a girl six years of age who was suddenly seized with fever, nausea, and vomiting. Paralysis was observed on the second day and involved all four extremities. The sphincters were also affected at first. The arms began to recover three weeks after the onset of the attack, and the ultimate condition was one of almost complete paraplegia affecting the lower limbs, while the right arm also was weak. The knee-jerks were absent and there was a loss of faradaic reaction in the affected muscles, but little, if any, wasting. The condition of the spinal cord was especially observed. The ganglion cells were very much altered. The processes had disappeared and the cells themselves had become more or less formless masses. The nucleus and nucleolus seemed often to persist after the body of the cell had disappeared. Groups of minute but perfectly formed ganglion cells were seen here and there, chiefly in the parts corresponding to the lateral horns. The nerve fibrils were very much changed in the grey matter. Often they had entirely disappeared; where present they were mostly reduced to fine lines and they were frequently distinctly varicose. The fibres in the anterior roots as they passed through the white matter seemed to be fewer in number and thinner than normal. In only a few specimens did they seem to be degenerated. There were overgrowth and infiltration of the neuroglia, and in many parts of the grey matter of the cervical and lumbar enlargements translucent areas were visible, the result of destruction of nerve fibrils and ganglion cells, and with a high power enormous spider cells were visible in these translucent patches. The central canal was pervious throughout the cord. In many parts of the cord a greatly increased vascularity was evident, and advanced perivascular changes could be made out, often in the areas in which the central and peripheral vessels met. No distinct disease of the walls of vessels was made out. There was considerable cell infiltration in most parts of the cord. This was most distinct in the mid-cervical region. This cell infiltration was of two kinds, general and patchy, the patchy infiltration being frequently perivascular. The cells in this infiltration were also of two kinds, round and with processes; and there was a third kind of infiltration of large irregular cells without distinct processes in the area around the central canal and apparently derived from the cells lining the canal. The changes in the white matter were similar in kind but of much less intensity, and these changes extended throughout the whole length of the cord. From the study of this case—a case observed pathologically at an extremely interesting period, viz., after the intensely acute processes had subsided and before the cicatricial condition was established—Dr. Trevelyan is inclined to support the view identified chiefly with the names of Siemerling and Goldscheider, that this disease is of vascular and interstitial origin—i.e., that the changes in the ganglion cells are secondary to the changes in the vessels and interstitial tissue. As regards the ultimate origin of this disease, although no proof has yet been offered, there are strong reasons for supposing it to be infective.

THE HEALTH OF CORNWALL.

A CORRESPONDENT has lately directed attention to some very obvious sanitary defects in the north part of Cornwall. We have pleasure in acknowledging the publicity which has been given by our local contemporaries to his criticisms and sincerely wish that they may be the starting-point of more attention to questions of sanitation in this interesting county. The report of the Sanitary Committee of the County Council for August is before us and is not inconsistent in its general drift with the suggestions of our correspondent. The chairman, Mr. Silvanus Trevail, complains of delay on the part of the medical officers of health in sending in their reports, which may be taken as a sign that they are pressed by the duties of general practice, which, with their want of power and independence, makes them more indifferent in reporting what they see. There is a rise in the death-rate of August as compared with July; but as it is "only 13·49" the chairman thinks it very satisfactory and encouraging. It does not strike us as a very low death-rate for midsummer and a sparsely populated county. Some of the largest London parishes could boast as low a mortality. The zymotic death-rate has increased from 0·8 for July to 1·3 per 1000 for August, chiefly due to infantile diarrhœa. Diphtheria and croup have an increase from 10 cases and 1 death to 15 cases and 2 deaths. Scarlet fever has risen from 60 cases to 76, and shows an increase of 2 deaths. Typhoid fever has a decrease of 8 cases, but an increase of 3 deaths. Besides, we have no returns from several important districts, as Launceston (rural) St. Colomb, West Penwith, and Phillack, which have not even adopted the Notification Acts. Of thirty-six sanitary districts only two have isolation hospitals. The

chairman very properly points out the prevalence of scarlet fever at Camborne and Paul. At both places there was the same prevalence last year, and grave defects in the sanitary condition of each place were then pointed out. They remain absolutely the same, and the sanitary authorities seem in no way anxious "to make the necessary expenditure for the eradication of filth and disease." Cornwall is a county that, with a little intelligence on sanitary matters, would lend itself to ideal sanitary results. The farmer should be a perfect scavenger in his own interest. But landlords should be made to do their share of duty. The present sanitary condition seems to us "neither satisfactory nor encouraging."

ST. WINIFRIDE'S WELL.

FAITH-HEALING and miraculous cures are always interesting, and, whether supernatural or no, the fact of the cure remains. Our views on the subject were set forth recently in a leading article, but we are led to mention the subject again owing to our having received a paper by Dr. J. Johnston of Bolton. Dr. Johnston took a bicycle tour through North Wales and visited the famous holy well of St. Winifride. He tells us that numbers of crutches and the like, left by those who came halting and went away cured, are hung up in the chapel, and records of other cases are displayed on the walls. That such cures do take place is indisputable; as to the means there may be a difference of opinion. Our readers may remember some cases recorded by Professor George Buchanan of Glasgow,[1] when tumours spontaneously disappeared without any miraculous intervention, and though we should be the last to deny the powers of faith we can only assert that spontaneous "cure" of certain diseases is not unknown in the annals of science.

THE STRENGTHENING OF OUR DEFENCES.

EVERY week gives fresh *raison d'être* to our defence associations and makes us wish to see them in the strongest possible form for work and action, not only in a strictly defensive way, but in an aggressive spirit. The profession needs organisation for such purposes more than has yet been realised. The very best legal assistance should be within the means of such associations for the prosecution of certain cases before the law courts. The means of taking and procuring evidence for the presentation of cases before the General Medical Council is also an urgent desideratum. To these ends it seems to us that the first step is the consolidation of existing associations. The time for this seems to be ripe. There never was a period when so many medical men felt the necessity of membership of such societies. With such favouring circumstances and arguments the profession looks anxiously for the amalgamation of the Medical Defence Union and the London and Counties Medical Protection Society which, at present, greatly waste their resources and their strength in acting separately.

THE RETENTION OF DEAD BODIES IN HOUSES.

A propos of the late state of the weather a leading article in one of the daily papers refers to the retention of the dead in houses, and advocates removal to well-regulated mortuaries. The article is practically a review of another article in the *Free Review*, entitled "Living with the Dead." The assertion made by this latter writer, that it is usual to keep the dead a week or even five days, is, as our daily contemporary contends, an exaggeration, since in Liverpool most funerals take place not later than the fourth day, and many burials occur even sooner than this. Still, in such weather as we have had lately the retention of a body under certain circumstances for so short a period as twelve hours must be attended with much discomfort to the inhabitants of dwellings which contain no extra room for such a contingency. Not only is removal to a mortuary imperatively called for, but the speedy inclosure of the body in a coffin filled with coarsely powdered charcoal is greatly to be desired. As is well known, burial within twenty-four hours is absolutely enforced in many parts of the colonies and of the European continent. There are grave objections, sentimental and otherwise, to such a course being adopted in this country even in the hottest weather. But most medical men can remember cases where the inclosure of a body in the coffin has been rendered very desirable within a few hours after death, and where burial itself was equally demanded on the third or even the second day after death. It is much to be lamented that the study of disinfectants continues to be so neglected by undertakers and others with whom rests the care of the dead.

[1] THE LANCET, Nov. 7th, 1885.

MEDICAL REGISTRATION.

WE would remind our medical brethren of the imperative necessity both of promptly notifying any changes in their postal addresses to the branch registrar by whom they were originally registered, and also of answering at once any letter of inquiry that may be received from the registrar. Neglect of these precautions may result in the removal of names from the Register in consequence merely of the registered addresses being inaccurate. It should also be widely known that the General Medical Council may censure practitioners who employ unqualified assistants without exercising due personal supervision and control over them, and that several practitioners have been removed from the Register for permitting unqualified persons to practise under cover of their name and registered qualifications.

ARTIFICIAL DILATATION OF THE CERVIX IN PUERPERAL ECLAMPSIA.

THE October number of the *Revue Obstétricale Internationale* contains a report of an interesting case of puerperal eclampsia by Mdlle. de Moerloose of Brussels. The patient was a primipara, eight months' pregnant, who was admitted to hospital in a state of coma after having had six fits. There was marked general œdema, and the urine was highly albuminous. The os uteri admitted the tip of the finger, and there was no indication that labour was in progress. Chloral by the rectum, inhalations of chloroform, and morphine hypodermically were tried, but apparently without effect, as violent convulsions continued to occur at short intervals. Mdlle. de Moerloose therefore dilated the cervix with the fingers. Beginning with one finger, she was soon able to insert two fingers, and so on, till the os uteri was the size of a five-franc piece. The dilatation was done very gradually, the pressure with the fingers being made for a quarter of a hour, with intervals of the same time between each manipulation. No convulsions occurred while the dilatation was being effected. The membranes were then ruptured, and the head made to engage by pressure on the fundus. Delivery was completed with the forceps. The patient had two fits the same night, and two more on the day after delivery; she remained in a state of profound coma for several days, taking no nourishment except a little milk. The albuminuria did not commence to lessen till the eighth day. The patient was sufficiently well to leave the hospital on the fifteenth day. Mdlle. de Moerloose reports the case because she thinks that obstetricians are perhaps too much opposed to artificial dilatation of the cervix in similar cases. She does not mean that such a measure should be adopted as a matter of routine in each case, but considers that when drugs fail to produce an improvement in an hour, when the tissues are soft and dilatable, and the patient is evidently in a serious condition, digital dilatation

of the cervix in the manner above described offers the best chance of a favourable termination.

MEDICAL officers of both our own and of Continental armies will hear with great regret of the death, at an advanced age, of the eminent French surgeon, Baron Larrey, the son of the great military surgeon who accompanied the First Napoleon in all his brilliant campaigns and was present at his great battles. The late Baron Larrey had also seen a great deal of service in the field—from the siege of Antwerp in 1832 to the battle of Solferino—and was most deservedly popular and highly esteemed in and out of France for his great surgical talents and his eminent courtesy and kindness to all. Baron Larrey was a member of the French Institute and the Academy of Medicine. We hope in an early issue to publish a more extended notice of his work.

ON Tuesday, Oct. 22nd, the Royal Medical and Chirurgical Society will resume its meetings, and the first of the season promises a discussion of exceptional interest and value both to physicians and surgeons. Dr. Frederic Hewitt and Mr. Marmaduke Sheild have written a joint paper on Posture in its relation to Surgical Operations under Anæsthetics. This is one of those subjects which, as a rule, is only dealt with incidentally and in relation to particular cases, and it cannot fail to be of great service to operators to have the whole subject treated comprehensively and exhaustively. The paper will be illustrated by diagrams and drawings.

THE latest addition to the roll of gallant actions performed by medical men is that of Dr. Charles Toller of Ilfracombe, who, during the recent heavy gale which raged on our west coast and at the imminent risk of his life, descended by means of a rope a cliff on the Lee Bay Rocks, which are 150 feet in height, in order to apply restoratives to an apparently drowned person. Strenuous efforts were made by Dr. Toller to restore animation, and the patient partially rallied, but expired a few minutes before being landed at Ilfracombe in the lifeboat which had been sent to the rescue.

THE Lettsomian Lectures of the Medical Society of London will be delivered on Feb. 3rd and 17th and March 2nd, 1896, by W. Watson Cheyne, F.R.C.S., F.R.S., who has chosen for his subject, "The Objects and Limits of Operations for Cancer." The annual oration will be delivered on May 18th, 1895, by W. H. Allchin, M.D., F.R.C.P. The opening meeting of the society will be held on Monday next, when Sir James Crichton Browne, the President, will deliver his address.

THE sixty-fifth session of the Harveian Society of London will commence on Thursday, Oct. 17th, at 8.30 P.M., at the Stafford Rooms, Tichborne-street, Edgware-road, when Dr. Symes Thompson will read a paper on "The Climate of Egypt." All members of the profession are cordially invited to attend. The Harveian Lectures for 1895 will be delivered by Dr. M. Handfield-Jones in December.

THE annual grant amounting to £1700, of which King's College, London, was deprived by the late Government, is to be restored to the College next year by the present one, the restitution being accompanied by no stipulations as regards tests.

THE delivery of the Bradshaw Lecture at the Royal College of Physicians by Dr. Bradbury on some New Vasodilators, which was announced for Nov. 7th, has been postponed to Tuesday, Nov. 12th, at 5 P.M.

Pharmacology and Therapeutics.

BIBORATE OF SODA IN EPILEPSY.

SINCE Dr. Gowers first introduced this drug as a remedy in certain cases of epilepsy various observers have from time to time published observations on its effects. Amongst these are Stewart Lockie, Risien Russell, James Taylor, and Alexander in this country, Folsom and Jones in the United States, and Mairet, Féré, and others in France. The last-mentioned observer has recently published in the *Revue de Médecine* an account of an extensive series of observations of the effects of borax in epilepsy, the result of which is to show that, while in certain cases benefit is conferred by the use of the drug, in most cases the disadvantages are such as to more than counterbalance the slight benefits. Altogether 122 cases were treated, and of these 87 derived practically no benefit; but in some cases benefit was experienced. In 6 of these cases the benefit was doubtful on account of the short duration of the trial; in 7 patients amelioration was followed by relapse; and in 11 cases improvement resulted from the use of borax, but not so marked as the improvement following the use of bromides. The third chief group consisted of 11 cases in which undoubted, and in some cases remarkable, benefit resulted from the use of borax, all the more noteworthy because of the absence of benefit from bromide in large doses in some of those same cases. Full details of the treatment and its effect in these cases are given, and the tolerance of large doses of the drug in certain cases is striking. Dr. Féré next considers the various drawbacks to the treatment under the name of "borism." Intestinal troubles he found to be most troublesome—nausea, vomiting, and anorexia; but in certain cases the administration of borax in glycerine instead of in water obviated this drawback. Dryness of the skin and redness and inflammation of the mucous membranes were also produced. Dryness of the hair also followed, and in some cases loss of hair resulted, but only temporarily. The most frequent form of skin eruption was a kind of eczema answering to the description in most particulars of seborrhœic eczema; in other cases the eruption consisted of reddish patches which desquamated; while in still another ciass the eruption was papular and accompanied by prurigo of varying intensity. This also was sometimes followed by desquamation. In some cases a condition of great weakness succeeded prolonged treatment, this being the result, apparently, partly of the toxic effect of the drug and partly of the anorexia which followed its use. These different effects, it may be mentioned, have for the most part been mentioned by other observers, but another much more serious result is alluded to in this paper as following the use of borax in certain cases. This is an effect upon the kidneys, giving rise to the presence of albumin in the urine, and as a rule accompanied by œdema of the face and extremities, so that in all cases in which borax is given in anything like full doses it is essential that a careful watch should be kept upon the state of the urine. In one of the cases under Dr. Féré's observation uræmia and hyperpyrexia developed, and the patient died. The kidneys were found to be inflamed. The general facts in the paper indicate that, while borax is not as a rule to be compared to the bromides in regard to its efficacy in the treatment of epilepsy, still there are cases which, while intractable by the bromides, are very remarkably benefited by borax, but that the drug whenever it is given in large doses has certain disadvantages and even dangers which should be carefully guarded against.

THE USE OF COMPOUNDS OF BISMUTH AND NAPHTHOL AS INTESTINAL ANTISEPTICS.

Dr. Chaumier recommends these compounds as possessing to a large extent the antiseptic powers of β-naphthol, but not having the burning taste or other unpleasant properties of the latter. The naphtholate of bismuth is conveniently prescribed, and is in the form of a powder which is decomposed in the digestive tracts into naphthol and an oxide of bismuth. Dr. Chaumier has chiefly used these combinations in the diarrhœas of children and adults and also in diarrhœa due to tubercle and typhoid fever with successful results.

THE ACTION OF SALOPHENE IN CASES OF ACUTE ARTICULAR RHEUMATISM, CHOREA, AND NEURALGIA.

Dr. Augustin Huot of Paris has written a pamphlet on the action of this drug, which gives good results in the above

classes of disease without the drawbacks which often attend the use of salicylates. Chemically this drug is a salicylic ether of acetyl-paramido-phenol; it is insoluble in cold water and slightly soluble in hot, but is freely dissolved by alcohol and ether, and is easily decomposed in an alkaline medium. Salophene is not decomposed in the stomach, but is slowly decomposed by the intestinal secretions into its more elementary constituents, salicylic acid and acetyl-paramido-phenol; and the drug owes its antipyretic, analgesic, and antirheumatic properties to the salicylic acid chiefly, but also to the aniline bases, but without the toxic properties of the latter. Elimination takes place chiefly by the urine, and to some extent by the fæces. After quoting many cases in which the use of this drug produced beneficial effects, Dr. Huot concludes that salophene possesses the remedial properties of salicylate of soda and has not the inconveniences of the latter. It is well tolerated and does not irritate the stomach or the nervous system. It may be given in the powdered form, in cachets, or any other convenient manner, and an average dose would be from three to four grammes in twenty-four hours.

THE LIFE AND WORKS OF LOUIS PASTEUR, BY SIR JAMES PAGET.

UNDER the general heading "Scientific Worthies" and the sub-heading "Louis Pasteur" the following article originally appeared in *Nature* on March 26th, 1891. Having regard to the recent lamented death of M. Pasteur and to the fact that the particular number in question of *Nature* is now out of print, we have thought that it would be desirable and interesting to reproduce the article. Those members of our profession who have already read it will doubtless be glad of an opportunity of again perusing it, whilst those whose attention it has perhaps escaped will be glad to possess an estimate of the work of the great French chemist, who has now gone to his rest, from the pen of a great English surgeon who is happily still living. Although published in 1891 the article is practically up to date, for since that time no more research work has been undertaken by M. Pasteur himself. For permission to reprint the article we are indebted to its author, Sir James Paget, and to Messrs. Macmillan and Co., the proprietors of *Nature*.

Louis Pasteur was born on Dec. 27th, 1822, at Dôle, where his father, an old soldier who had been decorated on the field of battle, worked hard as a tanner. He was an earnest, industrious, and thoughtful man, fond of reading, and very desirous that his son should be well educated and should gain renown in some branch of learning. Father and mother, alike in their enthusiasm and ambition, devoted themselves to their son—they would "make a man of him," they said. In 1825 they removed to Arbois, and as soon as he was old enough to be admitted as a day-boy Pasteur began his studies in the Communal College, and there, after the first year or two, he worked hard and gained distinction. Thence he proceeded to Besançon, and thence, after a year's successful study, to the École Normale in Paris, to which, after gaining a high place in the entrance examination, he was admitted in 1843. His devotion to chemistry had begun while he was a pupil of Professor Darlay at Besançon, and now he studied it under Dumas at the Sorbonne and Balard at the École Normale. His love of science became intense: he spent every day in attendance on the lectures, in reading, and in practical work in both chemistry and physics.

Among the teachers in the École by whom he was most encouraged was M. Delafosse, who was especially studying molecular physics, and it was after a conversation with him that Pasteur was guided to the careful study of crystals and to the inquiry which led him to his first important discovery. It was known that the tartrate and the paratartrate of soda and ammonia, though exactly isomeric, similar in their atomic composition, specific gravity, and crystalline form, yet differed, not only in many of their chemical relations, but, as Biot had shown, in the fact that a watery solution of the tartrate deflected the plane of polarised light, and that of the paratartrate did not. Pasteur could not believe that bodies apparently identical in atomic composition and construction could thus differ in their relations to light. He had already observed a dissimilarity between the crystals of the tartaric and of the paratartaric acids, in that the latter were and the former were not symmetrical, and he found the same difference between the crystals of their salts. Now, by a laborious study and repeated measurements of the crystals of these and other similar compounds, he showed that in the paratartaric (now called racemic) acid there are two distinct forms of tartaric acid, of which the one (dextro-tartaric) is identical with the ordinary tartaric and, like it, in solution deflects light to the right, the other (lævo-tartaric) deflects it to the left. The two in combination, as they occur in the ordinary paratartaric acid, neutralise one another in their influences on polarised light and do not deflect it in either direction. Similarly, he next found that the crystals of the two acids and of their respective salts are different in their forms; those of the dextro-tartaric and its salts are similar to those of the ordinary tartaric and its salts in their dissymmetry; those of the lævo-tartaric are also dyssymmetrical, but in the opposite direction; those of the two combined in the paratartaric and its salts are symmetrical. Thus was explained the seeming anomaly of so distinct a difference between bodies exactly isomeric. A great problem was solved, and it was among its results that gradually the way was made clearer by which the synthesis of organic alkaloids and of sugars has been achieved.

These researches had occupied six years, and Pasteur had gained by them an early high renown, and he hoped that by continuing to work on the same lines he might obtain results yet more important, especially in the contrast of the symmetrical forms of crystals derived from the chemistry of dead substances and the dissymmetrical of those derived from the chemistry of living bodies. He had invented instruments and methods for experiments. But it chanced that at this period of his work he was, in 1854, appointed Dean of the Faculty of Sciences at Lille, and, though he gave up crystallography with great regret, he determined to investigate and teach a subject of more direct utility. The chief industry of the town was in the manufacture of alcohol from beetroot and corn, and he decided to teach the scientific methods of improving it, and to promote the scientific brewing of beer that might compete with those of Germany and Austria. Hence fermentation became his chief study, and in this was the beginning of the researches which led to the most important of his discoveries. But although it may have seemed like entering on a new subject, the change was an illustration of the regular sequence that may be observed in the order of all Pasteur's work, for among the facts which had most influence on the course of his investigations was one which he had observed in his study of the tartaric salts. He had traced the fermentation of the ordinary right tartrate of ammonia in a solution containing albuminous matter and had observed the coincident appearance of a distinct microorganism. Then he had shown the breaking up of the composition of the paratartaric acid by a similar process of fermentation by putting a minute portion of green mould into water containing phosphate of potassium and ammonia, but no albuminous matter. Here also there was an abundant formation of organisms, and with this the gradual disappearance of the dextro-tartaric acid, of which, as other experiments showed, the carbon was taken for the sustenance and growth of the organism of the mould. In both cases the fermentation had seemed due to the action of a living organism. Pasteur's belief that these and all processes of fermentation were primarily and essentially due to the presence and action of minute living organisms in the variously fermentescible fluids led him to study them with the combined chemical and microscopical research which no one before him had ever used with the same constancy or the same skill. It was, indeed, a combination of methods of research which had hardly ever before been used. There were excellent chemists and there were excellent microscopists, but they usually worked apart and hardly helped one another. Pasteur—well instructed in exact methods of research, and both chemist and microscopist—attained results far beyond what any before him had reached. It was no easy thing for him to justify the study of fermentation on the lines suggested by what was called the vitalistic or germ theory when the hypothesis of "spontaneous generation" was held by many, and when the whole process of fermentation seemed so well explained by the chemical theory of Berzelius or by that of communicated molecular motion held by Liebig and others who agreed with him in thinking that the organisms in fermenting liquids might be considered as

accidental, except in so far as they might supply organic matter to the liquid. But Pasteur did more than justify the germ theory, for he proved its truth by a multitude of facts previously unobserved and from which he constructed general principles of which both the scientific value and the practical utility are now beyond estimate.

It is not possible to describe in detail or in chronological order the course and methods of Pasteur's researches on the various fermentations and on processes closely allied to them. Only their chief results can here be told; only the things which he discovered or which, since he studied them, have been deemed not merely probable, but sure. Thus he proved the constant presence of living micro-organisms, not only in yeast, in which Cagniard-Latour, and Schwann especially, had studied them, but in all the fermenting substances that he examined; he proved the certain and complete prevention of fermentation, putrefaction, and other similar processes in many substances, however naturally subject to them, by the exclusion of all micro-organisms and their germs or by their destruction if present; and he proved the constant presence of various micro-organisms and their germs in the air and water, in the earth, in dust and dirt of every kind—their abundance "everywhere." By the proof of these things the evidence became complete that fermentations and similar processes are primarily and essentially due to the action of organisms living in the fermenting substance. But, more than this, it was ascertained that each method of fermentation—vinous, lactic, acetic, putrefactive, or whatever it may be—is due to a distinct specific micro-organism appropriate to that method, and by its own vital processes initiating the changes which lead to the formation of the "specific products" of the fermentation, the alcohol, the vinegar, the virus, or whatever else. For each specific micro-organism has to live on the constituents of an appropriate fermentescible fluid which it decomposes, assimilating to itself such elementary substances as it needs for its own maintenance and increase, and leaving the rest to combine in the forming of the "specific products." Further, and most importantly, it was made certain by Pasteur's investigations that, by various appropriate methods of "cultivation" which he invented, the individuals of each species of ferment may be separated from others with which they are mingled, and that, thus separated, the individuals of each species may by means of a "pure cultivation" be multiplied indefinitely, as, especially, in the production of "pure yeast." And in certain instances it was shown that the active power of micro-organisms may, by cultivation, be so "attenuated" that they will produce only comparatively slight changes in substances which, in their natural state, they potently affect.

The most direct applications of the results of Pasteur's studies of fermentation were, naturally, made in the manufacture of wine and vinegar, and, at a later time, of beer. The "diseases," as they were fairly called, of these fermented liquors, the "thickness," "ropiness," "sourness," and others, could be traced to the disturbing influences of various other micro-organisms mingled with those of pure yeast, the true alcoholic ferment, and each producing an injurious method of fermentation. This being made sure, the prevention of the diseases became possible by the exclusion or destruction of every organism other than than the true one; and of this one the proper cultivation could insure the sufficient production. The methods of thus preventing or arresting the diseases have become too various to be described here. Among them is that of heating wines and beers sufficiently to destroy all the germs remaining in them; and the uses of this, which has been specially called Pasteurisation, and of many others, have made brewing and wine-making nearly secure against the great losses to which, before Pasteur's time, they were always liable from the disturbances of their fermentations.

The utility of the proof that fermentations, including the putrefactive, are absolutely dependent on the action of living micro-organisms was speedily shown in the prevention or remedy of diseases far more important than those of wine and beer. The discovery of the causes and processes of what were justly called the "diseases" of fermented liquids enlarged the whole range of a great section of pathology, showing, as it soon did, so intimate relations between contagious diseases and disordered fermentations that it became safe to apply the facts found in the more simple to the study and treatment of the most complex. The study of the diseases of fermented liquids led straightway to the practice of antiseptic surgery. Its first practical application in medicine was in 1862, when Pasteur, who had proved the existence of a living organism in fermenting ammoniacal urine from a diseased bladder, recommended the washing of such bladders with a solution of boracic acid, now a well known "germicide." This was done successfully by M. Guyon, and the practice is still commonly followed.

For the treatment of wounds and of parts exposed by wounds, the whole subject of the complete exclusion of micro-organisms, and of their destruction if present, was, in and after 1865, studied with especial care by Sir Joseph Lister, and the results obtained by him and others following his example were so convincing that the antiseptic practice, which many justly call Listerism, is followed everywhere by every surgeon of repute. The methods of excluding micro-organisms from all wounds, the antiseptic substances employed, the modes of applying them are more than need be told, and they increase every year; but they have all the same design—the complete exclusion or destruction of all living germs and micro-organisms capable of exciting putrefaction or any other fermentation in parts exposed by wounds, their exclusion from air, water, sponges, surgical instruments, dressings, and everything that can come in contact with such parts. And the system is not nearly limited to the treatment of wounds. In various methods and degrees it is applied in the construction of hospitals and infirmaries, in the prevention of the spread of infection and of every form of blood-poisoning. In is impossible to estimate the number of the thousands of lives that are thus annually saved by practices which are the direct consequences of Pasteur's observations on the action of living ferments and of Lister's application of them. In the practice of surgery alone they are by far the most important of the means by which the risks of death or serious illness after wounds are reduced to less than half of what they were thirty years ago, and of the means by which a large number of operations, such as, at that time, would have been so dangerous that no prudent surgeon would have performed them, are now safely done.

In antiseptic practice and in the manufactures connected with fermentation, the design is to exclude or destroy all micro-organisms. Many kinds might be harmless, but at present there are no ready and sure means of excluding only those from which mischief might arise, and, therefore, in the schemes for complete exclusion, no account is taken of the great general principle established by Pasteur, that each method of fermentation is due to the action of one special living organism. This in relation to contagious diseases would now have become one of the chief subjects of his study. But again he was obliged to change the subject of his work, for in 1865 he was urged by Dumas, and was forced to consent, to undertake the investigation of a disease of silkworms in the south of France. Since 1849 this disease, called *pébrine*, had been ruinously prevalent. In 1865 the loss due to it was estimated at four millions sterling, and it had spread to many other countries from which silkworms' eggs had been brought to France. M. Quatrefages had reported to the Academy that, among the results of many previous inquiries, especially by Italian naturalists, minute "corpuscles" had been found in the bodies of diseased silkworms and in the moths and their eggs. Pasteur, of course, suspected that these were disease-giving organisms, and directed his chief studies to them, though not without making a careful investigation of the whole disease, a task in which he proved himself to be not only a chemist and a microscopist, but an excellent clinical observer. He soon found that among several diseases of silkworms the two most important were *pébrine*, which was specially called *the* silkworm disease and was the most destructive, and another, often very prevalent, called *flacherie*. He found "corpuscles" in both, and he confirmed and widely extended the observations of those who had already studied them. But the most important facts, both for the prevention of the *pébrine* and for general pathology, were those by which he showed that it was not only contagious but hereditary. The proof of its being contagious was chiefly seen, as by others, in the inoculations of silkworms through accidental wounds, and in the consequences of their feeding on mulberry-leaves on which the disease germs had been deposited. Many of the worms thus or in any other way infected soon died; in many the material for their silk was spoiled; in others the disease continued, after their spinning, in their chrysalides and in the moths developed from them. These moths laid diseased eggs, and of these were born diseased worms which died young or, at the most, were spoiled for the production of silk, and so long as they lived were sources of contagion. Thus the disease passed on by inheritance from year to year,

The germs in eggs laid by diseased moths survived, but those left on leaves, or in the dust, or in the bodies of dead moths, soon perished; only in the diseased and living eggs was the contagion maintained. These things were proved by repeated experiments and by observations by Pasteur in his own breeding-chamber, year after year, and they made him believe that the disease might be put an end to by the destruction of all diseased eggs. To this end he invented the plan which has been universally adopted, and has restored a source of wealth to the silk districts. Each female moth, when ready to lay eggs, is placed on a separate piece of linen on which it may lay them all. After it has laid them and has died it is dried and then pounded in water, and the water is examined microscopically. If "corpuscles" are found in it, the whole of the eggs of this moth, and the linen on which they were laid, are burnt; if no corpuscles are found, the eggs are kept, to be in due time hatched, and they yield healthy silkworms.

Pasteur continued these studies for four years, going every year for several months to a little house near Alais, in which he watched every step in the life of the silkworms bred and fed by himself and others. His other investigations had thus been in no small degree interrupted; but worse interruption came in October, 1868, when, as it seemed from overwork, he had a paralytic stroke. For a time his life was in great peril, but, happily, he recovered, and without mental impairment, though with permanent partial loss of power on his left side. For nearly two years he could do very little beyond directing experiments for repeating and testing his researches at Alais in 1869, and in Austria in 1870. Then came the French-German war, the misery of which, added to that of his paralysis, made him utterly unfit for work. At the end of the war he returned to work, and, after careful researches on the diseases of beer similar to those by which he had studied the diseases of wines, he gave himself especially to the study of the "virulent diseases" of animals—the diseases which might reasonably be suspected to be due to different kinds of "virus" derived from different species of micro-organisms. The suspicion was already justified by what he had observed in the diseases of wine and beer and by some more direct facts, for, in 1850, Rayer and Davaine had found organisms in the blood of animals with anthrax; and, in 1865, Davaine, stirred by Pasteur's recent demonstrations of organisms much like these as agents in the butyric fermentation, had gathered evidence of the absolute dependence of anthrax on the presence of these organisms in the blood. But his observations were disputed and his conclusions were not accepted till Pasteur proved that they were correct, and then extended his researches over a far wider range of subjects. The objects of research in this wider range included, indeed, only a small proportion of the diseases connected with micro-organisms, but in a few years it was made certain that some, and probable that all, of the diseases usually classed as virulent, contagious, or specific, are due to distinct living micro-organisms, and to the products of the changes which are initiated by them in the blood or other fluids or substances in which they live. Thus, that which had often been an ingenious hypothesis of a *contagium animatum* became an accepted general law; diseases that had been called virulent were now more often called parasitic; and it may justly be said that Pasteur's researches were the efficient beginning of the vast science of bacteriology—vast alike in natural history and in pathology and in its intimate relations with organic chemistry.

Besides ascertaining the micro-organisms appropriate to several diseases, Pasteur, still working on the lines which he had followed in his studies of fermentation and of the diseases of beer and wine, found various means of "cultivating" the germs, separating them, multiplying them, and then testing their different influences on different animals, or on the same animals in different conditions, or after various changes induced in themselves. Among these changes the most important and most fruitful in its further study were the various means of "attenuation" by which the virulence of disease-producing micro-organisms can gradually be so diminished that at last they can, without harm, be inoculated or injected into an animal which they would have rapidly killed if similarly inserted in their natural state. And some of these injections were shown to be better than harmless, for, by conveying the disease in a very mild form, they rendered the animal for some considerable time insusceptible of that same disease in a more severe form; they conferred an immunity similar to that given by mild attacks of the contagious fevers which, as it is commonly and often truly said, "can be had only once." Or, as Pasteur held, the inoculation with the attenuated virus was similar to vaccination, which gives protection from small-pox by producing similar disease in a milder form. Hence began the practice of "protective inoculation" for many diseases besides small-pox.

In studying the methods of attenuation Pasteur found many facts which are not only valuable in bacteriology, but are likely to help to the knowledge of important principles in general pathology. To cite only a few examples—he found marked differences among the micro-organisms of different ferments in their degrees of dependence on air. The great majority need oxygen for the maintenance of life, but unlike these, which he named aërobic, were some anaërobic, the first examples ever known of organisms capable of living without oxygen. He showed that the bacilli of anthrax, being aërobic, soon perish and disappear in the blood of the animals that have died of the diseases due to them, and that in the same blood the anaërobic septic bacilli needing no oxygen now appear and multiply. In anthrax, also, he showed that the attenuation may best be attained by keeping the cultivated bacilli at a high temperature (about 42° C.) for a certain number of days, regulated according to daily tests of the reduction of their virulence. In the end they become incapable of killing even mice, and are protective for sheep and cattle and other animals, which in their natural intensity they would rarely fail to kill. In chicken-cholera, the disease for which the first experiments in protective inoculation were made, he showed that the due attenuation can be obtained by a series of successive cultivations of the micro-organisms in pure air, provided that intervals of several days or weeks are allowed between each two of the cultivations in the series. In experiments on the transmission of the virus of a disease of one species through a succession of animals of another species he showed that the virulence of the bacilli of swine-erysipelas was increased by transmission through pigeons, but diminished by transmission through rabbits. And as to the varying susceptibility of the same animal under different conditions, a fact so commonly observed in man, he showed that chickens, which are ordinarily insusceptible of anthrax, could be made susceptible by lowering their temperature. They became again insusceptible when their natural temperature was restored, and when apparently dying of anthrax in the cold they recovered if warmed.

It was a step far beyond what had been obtained by protective inoculations when Pasteur invented and proved the utility of his treatment of rabies. Here he proved that when a virus has been inoculated or in any way so inserted that it may justly be deemed sure to destroy life, this result may, at least in the case of rabies, be prevented by a daily or otherwise gradual series of inoculations, beginning with the same virus very attenuated and diminishing the degree of attenuation till it is used in such intensity as, without the previous graduated inoculations, would certainly have been fatal. The results of the treatment of rabies on this principle are well known; its success is certain and is enough to justify the hope that by similar treatment, whether with virus simply attenuated or with some "lymph" derived from a cultivated virus or from the chemical products of its action on the liquids in which it has grown, other specific diseases may be similarly controlled. This is especially probable for those in which, as in rabies, there is a clear interval between the entrance of the virus and the first outbreak of the disease; and it is becoming very probable that tuberculosis will be one of these. But it would be useless to imagine the probabilities of what will now follow from the researches that have already followed the discoveries of Pasteur.

It hardly need be said that this summary of Pasteur's life and works, and of the chief results to which they have led, can give no fair estimate of the number and the variety of his experiments and observations. Only a complete personal study of his published works, and especially of those in the *Comptes Rendus de l'Académie des Sciences*, can give this. Yet even a mere summary may indicate the most notable points that may be studied in his scientific character. Of his charming personal character there is no need to speak here. Clearly, he had a native fitness and love for the study of natural science, and these were well educated and have been manifest in his whole life. But with this loving devotion to science he has shown not only a very rare power both of thinking and of observing, but that spirit of enterprise which stirs to constant activity in the search after truth, especially by way of experiment. With the power of accurately thinking what is likely to be true, he shows a happily adjusted ingenuity in the invention of experiments

for tests of thoughts, and the habit of doubting the value of any scientific thought, even of his own, which does not bear experimental tests. Especially, the thoughts of what may be true in biology seem to have been submitted, if possible, to tests as strict as those that may be used in chemistry and physics; and they appear to have been repeated and varied with admirable patience and perseverance whenever any doubt of previous conclusions was felt by himself or reasonably expressed by others. He has practised what he urged on his younger colleagues at the opening of the Pasteur Institute: "N'avancez rien qui ne puisse être prouvé d'une façon simple et décisive." Besides, with all his mental power and caution, we can see, in the course and results of Pasteur's work, the evidence of rare courage and strong will, and of singular skill in the use of the best means of scientific investigation. He has been chemist, microscopist, and naturalist, and has applied all the knowledge thus gained to the practical study of pathology. It is not strange that he has attained the results of which the best, and only the best, have here been told.

The honours that have been bestowed on Pasteur need not be mentioned. His chief reward may be in the happiness of seeing some of the results of his life-long work; and, indeed, very few scientific men have lived to see their work bear such good and abundant fruit. No field of biological study has in the last twenty years been so effectually studied as that which he opened, and in which he showed the right methods of research. Now, wherever biology is largely taught, the bacteriological laboratory has its place with the chemical and the physiological; and, for a memorial of the gratitude not only of France, but of many other nations, there is in Paris the Pasteur Institute, which was constructed at a cost of more than £100,000, and was opened in 1889. Here he may not only see the daily use of his treatment for the prevention of rabies, but may observe and still take his part in the extension of the vast range of knowledge in which there has been constant increase ever since the first sure steps were made by his discoveries.

Park-square-west, N.W. JAMES PAGET.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Glamorganshire County Sanitary District.—Dr. William Williams, the county medical officer of health, has recently made a valuable addition to the public health literature of his county in the shape of a little volume entitled "A Sanitary Survey of Glamorganshire." It formed the subject for Dr. Williams' thesis for the degree of Doctor of Medicine at Oxford University, and it is a contribution which should be of valuable assistance to the members of the Glamorganshire County Council, as also to those of the local authorities throughout the county. In the introduction of the volume there is a letter from Sir Henry Acland to Dr. Williams, which forms in itself a dissertation on public health questions. Sir Henry Acland refers to the wide range of knowledge which the medical officer of health of the present day is expected to possess; in reference to this point he observes: "Many live who can hardly believe that such modern officers are members of the same profession as some of the old but wise and kindly practitioners of fifty years ago." Dr. Williams' little volume contains a sanitary district diagram of the county to which it relates, a provision that certainly much facilitates the reading and understanding of a medical officer's report. In Part I. of the volume an account is given of the physical features of the county, of its industries, surface geology, and water-supply. Part II. treats of the health history and vital statistics of the county, and in this part there is an instructive *résumé* of all the inspections in various parts of the county which have been from time to time made by the inspectors of the Local Government Board. Part III. treats of the sanitary condition of the various districts in the administrative county; and it is here that Dr. Williams gives a complete account of each district, together with such recommendations and advice as the circumstances of each case render desirable. In Dr. Williams' annual report for 1894, which has also just reached us, the Sanitary Committee of the County Council is urged to be more energetic in the matter of such powers as have been conferred upon them by the Rivers' Pollution Prevention Acts and the Housing of the Working Classes Act. During 1894 the birth-rate of the rural districts of the county was higher than that of the urban, indicating, Dr. Williams observes, that some of the rural districts are so only in name. The general death-rate of the county was 16·9 per 1000, the rates varying from 8·6 to 22·1. The infantile mortality was a high one—168·1 per 1000 births compared with 155·1 in the preceding year. There were 1726 cases of scarlet fever notified during the year, but out of this number it is astonishing to learn that only 2 were removed to an isolation hospital. Dr. Williams observes that the working classes in the county act on the belief that, as children are bound sooner or later to contract scarlet fever, it is therefore their duty in the presence of a mild type of the disease to give their children an opportunity of contracting it; in fact, one of the local medical officers reports that in his district parents under this mistaken sense of duty have taken their children into infected houses. It would be well, if possible, for the district medical officers of health to impress upon the public the obvious advantages from the point of view of survival of postponing the attacks until a late age period. Five cases of typhus fever were reported from Merthyr; the first 2 were hop-pickers returned from Herefordshire, and the remaining 3 (the attendants) contracted the disease from them.

Reading Urban Sanitary District.—During 1894 the Reading Sanitary Committee requested from Mr. Alfred Ashby, the medical officer of health, a report upon the desirability or otherwise of adding phthisis to the list of notifiable diseases. Mr. Ashby points out in his report that to regard phthisis as infectious in the same sense as small-pox, scarlet fever, &c., is to overstate the case, and he calls attention to the enormous factor which the personal equation may be held to play in the question. In other words, he insists upon the importance of improving the environment of the individual by the admission of sunlight and fresh air. It would, he remarks, be quite out of the question to separate phthisical persons from their families and to confine them in isolation hospitals for months and even years. In short, he discountenances notification and advises the distribution of leaflets. In this direction he thinks that probably as much might be done without as with notification, since medical practitioners could distribute such leaflets to the patients under their care. The disinfection of rooms, &c., in which a death from phthisis has taken place is also advised. The important subject of providing a satisfactory isolation hospital at Reading still appears to be, if not in actual abeyance, in a state akin to it. The council, it would seem, appoint committees to consider the matter, but exhibit a tendency to reject their recommendations.

"SMALL-POX IN BRISTOL DURING THE YEAR 1893–94."

Under this title Dr. D. S. Davies, with the aid of Dr. Heaven and Dr. Dowson, assistant medical officers of health for the city, has issued a very instructive report. After referring to the history of small-pox in Bristol since the year 1856 and to the mortality which it occasioned, a short account is given of the tramp epidemic of 1893, and then follows a full consideration of the 1893–94 epidemic. To cope with the epidemic required all the resources at the command of the sanitary authority, and although no cases from Bristol were refused isolation owing to lack of accommodation it is frankly admitted that at a critical point of the epidemic there was but one vacant bed. The tables in the report relate to 360 cases which occurred during the 1893–94 outbreak. At all ages under ten years the protective value of vaccination was well exemplified, and at that age period there were among the vaccinated not only no deaths but no serious cases. Out of the 360 attacks, 36, or 10 per cent., proved fatal, and of these 6 were children, all unvaccinated, under ten years of age. The figures in the following age groups show, as usual, the gradually decreasing power of the primary vaccination as age advances, and the results both as regards severity and fatality are, speaking generally, in accordance with those again and again observed. In commenting upon the degree of protection afforded by vaccination, the authors of the report refer to and deplore the growing tendency among some medical practitioners to produce but one small scar—a practice which not only confers a false sense of security

upon the subject, but tends to the disrepute of vaccination. Dr. Davies and his colleagues record a fatal case of small-pox in a vaccinated child aged thirteen, the only death they have met with in a vaccinated person under fifteen years of age in the course of two epidemics comprising 687 cases, 96 of which were in children under fifteen. There is also recorded an interesting instance of a child born in the small-pox hospital during the early convalescence of the mother from a discrete attack; the child remained in hospital with the mother for twenty-one days, but was susceptible neither to small-pox nor to vaccination. Passing to a consideration of the behaviour of the vaccinated and unvaccinated exposed to the infection of small-pox in invaded houses we find some interesting figures. At ages below ten, the vaccinated had a twenty-three-fold immunity from attack and a complete security against death as compared with a mortality among the unvaccinated of 11·5 per cent. At ages above ten the vaccinated had a three-fold immunity from attack and a ten-fold immunity against death as compared with the unvaccinated. As an instance of the protective value of vaccination performed after exposure to small-pox, it may be mentioned that of 59 unvaccinated persons exposed to the disease, 23 were vaccinated on or before the fifth day of exposure, 3 seven days after exposure, and 1 not until after the eighth day; in the last 4 cases, as the writers observe, no protection could probably be claimed from vaccination. Of the total 27 none contracted small-pox, whereas of the remaining 32 unvaccinated persons more than half developed the disease. The value of re-vaccination is shown by the figures that follow. Out of 1341 persons remaining in the invaded houses 468 were successfully revaccinated, and 8 only—all of whom showed that they had been infected before revaccination—contracted small-pox. The attack-rate among the 859 once vaccinated was 5 per cent. In the remaining 14 the attempted revaccination was unsuccessful, and of these, 3 developed small-pox and 1 died. Among the hospital staff of 62 persons there were 3 cases of small-pox; of these one was that of a person not revaccinated and another a case in which revaccination had been performed fourteen years previously; both recovered. The third case was that of a washerwoman at the small-pox hospital, who had been vaccinated twenty years previously, and who had passed through several epidemics with impunity. She was unfortunately not included in the revaccinated list, and she died from hæmorrhagic small-pox. This sad result illustrates, the writers of the report point out, the necessity for the repetition of vaccination, especially in persons hourly exposed to contagion. As bearing upon this question may be related the fact that during the Bristol epidemic of 1893–94 there were 7 cases of small-pox in those who had been previously attacked by the disease, the shortest interval between the attacks being twenty-five years and the longest sixty-nine years; none were fatal.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 5930 births and 3949 deaths were registered during the week ending Oct. 5th. The annual rate of mortality in these towns, which had increased from 19·3 to 21·0 per 1000 in the three preceding weeks, declined again last week to 19·4. In London the rate was 15·9 per 1000, while it averaged 21·9 in the thirty-two provincial towns. The lowest rates in these towns were 13·2 in Croydon, 14·2 in Huddersfield, 14·4 in Brighton, and 14·6 in Derby; the highest rates were 26·6 in Liverpool, 28·8 in Sunderland, 30·3 in Salford, 32·3 in Bolton, and 37·2 in Blackburn. The 3949 deaths included 871 which were referred to the principal zymotic diseases, against 981 and 923 in the two preceding weeks; of these, 565 resulted from diarrhœa, 71 from diphtheria, 65 from "fever" (principally enteric), 64 from measles, 56 from whooping-cough, 48 from scarlet fever, and 2 from small-pox. The lowest death-rates from these diseases were recorded in Norwich, Croydon, Derby, and London, and the highest rates in Sunderland, Oldham, Salford, Bolton, and Blackburn. The greatest mortality from measles occurred in Oldham, Salford, and Blackburn; from scarlet fever in Gateshead and Wolverhampton; from whooping-cough in Bradford, Bolton, Wolverhampton, and Gateshead; from "fever" in Leicester and Sunderland; and from diarrhœa in Salford, Oldham, Burnley, Bolton, and Blackburn. The 71 deaths from diphtheria included 44 in London, 4 in West Ham, 4 in Salford, and 3 each in Birmingham, Liverpool, and Manchester. One fatal case of small-pox was registered in London and 1 in Oldham, but not one in any other of the thirty-three large towns. There were 198 cases of small-pox under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 5th inst., against 307, 271, and 234 at the end of the three preceding weeks; 17 new cases were admitted during the week, against 42, 23, and 21 in the three preceding weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2802, against 2674, 2732, and 2807 on the three preceding Saturdays; 252 new cases were admitted during the week, against 365, 344, and 339 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had increased in the three preceding weeks from 123 to 173, declined again last week to 158, and were 79 below the corrected average. The causes of 30, or 0·8 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Salford, Sheffield, Newcastle-upon-Tyne, and in fifteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Leicester, and Liverpool.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight principal Scotch towns, which had been 18·5 and 17·5 per 1000 in the two preceding weeks, rose again to 18·3 during the week ending Oct. 5th, but was 1·1 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 16·5 in Edinburgh and 17·5 in Dundee to 20·6 in Perth and 21·1 in Paisley. The 527 deaths in these towns included 62 which were referred to diarrhœa, 17 to whooping-cough, 8 to "fever," 4 to scarlet fever, 3 to measles, 2 to diphtheria, and not one to small-pox. In all, 96 deaths resulted from these principal zymotic diseases, against 93 and 79 in the two preceding weeks. These 96 deaths were equal to an annual rate of 3·3 per 1000, which was 0·9 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had declined from 78 to 48 in the five preceding weeks, rose again to 62 last week, of which 27 occurred in Glasgow, 9 in Edinburgh, and 7 in Dundee. The deaths from whooping-cough, which had declined from 15 to 9 in the four preceding weeks, rose again to 17 last week, and included 10 in Glasgow and 4 in Aberdeen. The deaths referred to different forms of "fever," which had been 10 and 6 in the two preceding weeks, increased to 8 last week, of which 3 occurred in Glasgow and 2 in Dundee. The 4 fatal cases of scarlet fever were within one of the number in the preceding week, and included 3 in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 66 and 82 in the two preceding weeks, further rose to 98 last week, and exceeded by 35 the number in the corresponding period of last year. The causes of 49, or more than 9 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 22·1 and 24·8 per 1000 in the two preceding weeks, declined again to 21·3 during the week ending Oct. 5th. During the thirteen weeks of last quarter the death-rate in the city averaged 23·4 per 1000, the rate during the same period being 18·6 in London and 16·5 in Edinburgh. The 143 deaths registered in Dublin during the week under notice showed a decline of 23 from the number in the preceding week, and included 12 which were referred to the principal zymotic diseases, against 21 and 24 in the two preceding weeks; of these, 8 resulted from diarrhœa, 2 from scarlet fever, 1 from small-pox, 1 from whooping-cough, and not one either from measles, diphtheria, or "fever." These 12 deaths were equal to an annual rate of 1·8 per 1000, the zymotic death-rate during the same period being 2·6 in London and 1·9 in Edinburgh. The deaths referred to diarrhœa, which had been 12 and 13 in the two preceding weeks, declined to 8 last week. The fatal cases of scarlet

MONTHLY ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON—SEPTEMBER, 1895.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1895.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of Infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,202,346	117	2096	1052	—	377	9	14	505	5	4175	12·4	11	117	76	185	77	—	67	1	449	983	2·9	8393	16·0	162
West Districts.																										
Paddington	122,756	1	27	28	—	9	—	1	10	—	76	8·1	—	—	1	3	3	—	—	—	10	17	1·8	110	11·7	131
Kensington	167,671	1	58	38	—	5	1	—	22	—	125	9·7	—	4	2	6	4	—	2	1	7	26	2·0	175	13·6	172
Hammersmith	108,429	1	43	13	—	6	1	—	5	—	69	8·3	—	2	1	3	—	—	1	—	14	21	2·5	116	13·9	154
Fulham	117,745	1	18	28	—	5	—	—	7	—	59	6·5	—	2	1	7	5	—	—	—	22	37	4·1	136	15·1	191
Chelsea	99,930	—	47	17	—	6	—	1	8	—	79	10·3	—	—	—	2	3	—	2	—	12	19	2·5	109	14·2	193
St. George Hanover-square	74,037	2	27	10	—	4	—	—	4	—	47	8·3	1	—	1	1	1	—	2	—	6	12	2·1	70	12·3	147
Westminster	54,003	—	18	6	—	1	—	—	4	—	29	7·0	—	1	—	—	—	—	—	—	8	9	2·2	80	19·3	208
St. James Westminster	23,149	—	5	3	—	2	—	—	1	—	11	6·2	—	—	—	1	—	—	2	—	1	4	2·3	35	19·7	188
North Districts.																										
Marylebone	137,392	1	70	28	—	16	1	2	24	1	143	13·6	—	2	1	1	3	—	3	—	14	24	2·3	166	15·7	132
Hampstead	77,592	—	34	7	—	7	—	—	4	—	52	8·7	—	—	1	—	—	—	1	—	7	9	1·5	73	12·3	196
St. Pancras	233,543	1	132	78	—	18	1	—	36	—	265	14·8	—	16	5	15	1	—	4	—	24	65	3·6	322	18·0	152
Islington	335,929	9	165	55	—	25	—	—	32	—	286	11·1	1	3	6	10	1	—	—	—	21	42	1·6	332	12·9	116
Stoke Newington	35,234	—	10	6	—	6	—	—	1	—	23	8·5	—	1	—	1	—	—	—	—	1	3	1·1	33	12·2	133
Hackney	215,623	4	88	59	—	41	—	—	29	1	222	13·4	1	6	5	8	2	—	8	—	24	54	3·3	222	13·4	146
Central Districts.																										
St. Giles	37,654	—	19	6	—	2	—	—	8	—	35	12·1	—	—	—	1	—	—	—	—	6	7	2·4	50	17·3	141
St. Martin-in-the-Fields	13,536	—	5	1	—	—	—	—	—	—	6	5·8	—	—	—	—	—	—	1	—	—	1	1·0	13	12·5	143
Strand	22,586	—	18	4	—	2	—	—	6	—	30	17·3	—	—	2	1	—	—	—	—	3	6	3·5	19	11·0	122
Holborn	32,168	—	23	9	—	1	—	—	7	—	40	16·2	—	2	—	—	1	—	—	—	1	4	1·6	59	23·9	254
Clerkenwell	65,036	—	45	13	—	6	—	1	5	—	70	14·0	—	4	2	4	—	—	1	—	3	14	2·8	88	17·6	175
St. Luke	40,763	—	32	8	—	2	—	—	12	—	54	17·3	—	9	—	2	1	—	—	—	5	17	5·4	80	25·6	183
City of London	33,824	1	23	2	—	2	—	—	1	—	29	11·2	—	1	—	1	—	—	—	—	3	5	1·9	43	16·6	23
East Districts.																										
Shoreditch	122,932	4	65	25	—	15	—	—	7	—	116	12·3	1	5	4	3	8	—	2	—	14	37	3·9	202	21·4	170
Bethnal Green	130,061	23	123	60	—	22	—	1	25	—	254	25·5	—	5	4	10	3	—	3	—	15	40	4·0	176	17·6	165
Whitechapel	75,820	11	89	19	—	3	—	—	6	—	128	22·0	1	7	6	4	2	—	—	—	11	31	5·3	123	21·2	222
St. George-in-the-East	45,227	2	44	30	—	4	—	—	5	—	85	24·5	—	2	2	9	—	—	1	—	7	21	6·1	88	25·4	190
Limehouse	56,885	3	39	19	—	7	—	1	10	—	79	18·1	—	6	1	2	—	—	1	—	8	18	4·1	86	19·7	153
Mile End Old Town	108,443	2	91	55	—	13	—	—	25	—	186	22·4	—	8	3	14	1	—	4	—	7	37	4·4	168	20·2	171
Poplar	171,230	4	96	65	—	36	2	1	21	—	225	17·1	—	1	4	9	5	—	5	—	22	46	3·5	258	19·6	184
South Districts.																										
St. Saviour Southwark	26,570	—	16	11	—	2	—	—	2	—	31	15·2	—	1	—	2	1	—	—	—	5	9	4·4	43	21·1	206
St. George Southwark	60,168	—	20	17	—	4	—	—	8	—	49	10·6	—	2	1	5	2	—	3	—	8	21	4·5	97	21·0	218
Newington	119,358	—	35	18	—	7	—	1	15	—	76	8·3	—	5	3	1	5	—	1	—	12	27	2·9	178	19·4	169
St. Olave Southwark	13,065	—	—	3	—	—	—	—	—	—	3	3·0	—	—	—	1	1	—	—	—	—	1	1·0	10	10·0	37
Bermondsey	83,861	1	23	9	—	6	—	—	4	—	43	6·7	—	2	1	3	2	—	1	—	13	22	3·4	120	18·7	171
Rotherhithe	40,713	—	20	13	—	5	—	—	8	—	46	14·7	—	1	—	1	—	—	3	—	2	7	2·2	50	16·0	108
Lambeth	284,883	11	161	65	—	14	1	—	35	2	289	13·2	2	6	7	16	9	—	2	—	25	67	3·1	356	16·3	155
Battersea	165,130	8	70	23	—	13	—	—	16	—	130	10·3	—	4	3	4	2	—	2	—	13	28	2·2	187	14·8	144
Wandsworth	185,956	6	60	12	—	8	—	—	20	—	106	7·4	—	2	2	—	2	—	1	—	18	25	1·8	184	11·5	182
Camberwell	252,737	13	90	81	—	37	1	1	27	1	251	12·9	2	6	3	15	1	—	8	—	24	59	3·0	301	15·5	184
Greenwich	175,183	3	70	88	—	10	—	3	27	—	201	15·0	1	—	3	15	5	—	—	—	19	43	3·2	220	16·4	145
Lewisham (excluding Penge)	82,410	—	32	8	—	—	—	1	8	—	49	7·8	—	—	1	—	—	—	1	—	7	9	1·4	77	12·2	178
Woolwich...	42,768	—	17	1	—	2	—	—	1	—	21	6·4	—	1	—	1	1	—	2	—	10	15	4·6	48	14·6	157
Lee	38,832	—	11	2	—	—	—	—	5	—	18	6·0	—	—	—	1	—	—	—	—	5	6	2·0	34	11·4	154
Plumstead	61,494	4	17	9	—	3	1	—	5	—	39	8·3	1	—	—	3	2	—	—	—	12	18	3·8	76	16·1	212
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 27 cases of membranous croup.

† Including deaths from membranous croup.

fever, which had been 2 in each of the two preceding weeks, were again 2 last week. The mortality from small-pox and from whooping-cough showed a decline from that recorded in the previous week. The 143 deaths in Dublin last week included 28 of infants under one year of age, and 28 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a marked decline from those recorded in the preceding week. Eight inquest cases and 7 deaths from violence were registered; and 38, or more than a fourth, of the deaths occurred in public institutions. The causes of 6, or more than 4 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING SEPTEMBER, 1895.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality during September in each of the forty-three sanitary areas of London. With regard to the notified cases of infectious disease in the metropolis during last month, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 12·4 per 1000 of the population, estimated at 4,392,346 persons in the middle of the current year. In the three preceding months the rates had been 8·4, 11·6, and 9·9 per 1000 respectively. Among the various sanitary areas the rates were considerably below the average in Fulham, St. James Westminster, St. Martin-in-the-Fields, St. Olave Southwark, Woolwich, and Lee; while they showed the largest excess in Strand, St. Luke, Bethnal Green, Whitechapel, St. George-in-the-East, Limehouse, Mile End Old Town, and Poplar. The prevalence of small-pox in London showed a marked decline during September, 117 cases being notified during the month, including 23 in Bethnal Green, 13 in Camberwell, 11 in Whitechapel, 11 in Lambeth, 9 in Islington, and 8 in Battersea sanitary areas. The Metropolitan Asylum Hospitals contained 227 small-pox patients at the end of September, against 33, 232, and 331 at the end of the three preceding months; the weekly admissions averaged 27, against 10, 49, and 57 in the three preceding months. The prevalence of scarlet fever in London showed a marked increase during September; this disease was proportionally most prevalent in Strand, Holborn, Clerkenwell, St. Luke, City of London, Bethnal Green, Whitechapel, St. George-in-the-East, Limehouse, and Mile End Old Town sanitary areas. The Metropolitan Asylum Hospitals contained 2745 scarlet fever patients at the end of September, against 1845, 2340, and 2435 at the end of the three preceding months; the weekly admissions averaged 333, against 229, 263, and 292 in the three preceding months. The prevalence of diphtheria in London also showed a considerable increase during the month under notice; among the various sanitary areas this disease showed the highest proportional prevalence in St. Pancras, Bethnal Green, St. George-in-the-East, Limehouse, Mile End Old Town, Poplar, and Camberwell. There were 664 cases of diphtheria under treatment in the Metropolitan Asylum Hospitals at the end of September, against 633, 680, and 666 at the end of the three preceding months; the weekly admissions averaged 101, against 109, 103, and 80 in the three preceding months. The prevalence of enteric fever in London showed a marked increase during September; this disease was proportionally most prevalent in Marylebone, Stoke Newington, Hackney, Shoreditch, Bethnal Green, Limehouse, Mile End Old Town, Poplar, and Camberwell sanitary areas. Erysipelas was proportionally most prevalent in St. Giles, Strand, St. Luke, and Mile End Old Town sanitary areas. The 14 cases of puerperal fever notified during September included 3 in Greenwich and 2 in Marylebone sanitary areas.

The mortality statistics in the accompanying table relate to the deaths of persons actually belonging to the various sanitary areas, the deaths occurring in the institutions of London having been distributed among the different sanitary areas in which the patients had previously resided. During the four weeks ending Saturday, Sept. 28th, the deaths of 5393 persons belonging to London were registered, equal to an annual rate of 16·0 per 1000 of the population, against 14·9, 21·0, and 16·9 in the three preceding months. The lowest death-rates during September in the various sanitary areas were 11·0 in Strand, 11·4 in Lee, 11·5 in Wandsworth, 11·7 in Paddington, 12·2 in Stoke Newington and in Lewisham, and 12·3 in St. George Hanover-square and in Hampstead; the highest rates were 20·2 in Mile End Old Town, 21·0 in St. George Southwark, 21·1 in St. Saviour Southwark, 21·2 in Whitechapel, 21·4 in Shoreditch, 23·9 in Holborn, 25·4 in St. George-in-the-East, and 25·6 in St. Luke. During the four weeks of September 983 deaths were referred to the principal zymotic diseases in London; of these, 449 resulted from diarrhœa, 185 from diphtheria, 117 from measles, 77 from whooping-cough, 76 from scarlet fever, 67 from enteric fever, 11 from small-pox, and 1 from an ill-defined form of continued fever. These 983 deaths were equal to an annual rate of 2·9 per 1000; the lowest zymotic death-rates were recorded in Hampstead, Stoke Newington, St. Martin-in-the-Fields, Holborn, St. Olave Southwark, and Lewisham; and the highest rates in St. Luke, Whitechapel, St. George-in-the-East, Mile End Old Town, St. Saviour Southwark, St. George Southwark, and Woolwich sanitary areas. Eleven fatal cases of small-pox were registered in London during the month under notice, the corrected average in the corresponding periods of the ten preceding years being only 3; of these 11 fatal cases 2 belonged to Lambeth and 2 to Camberwell sanitary areas. The 117 deaths referred to measles were 46 above the corrected average; among the various sanitary areas this disease showed the highest proportional fatality in St. Pancras, Clerkenwell, St. Luke, Whitechapel, Limehouse, and Mile End Old Town. The 76 fatal cases of scarlet fever were 21 below the corrected average number; this disease showed the highest proportional fatality in Shoreditch, Bethnal green, and Whitechapel sanitary areas. The 185 deaths referred to diphtheria were 40 above the corrected average number; among the various sanitary areas this disease was proportionally most fatal in St. Pancras, Clerkenwell, Bethnal Green, St. George-in-the-East, Mile End Old Town, St. George Southwark, Lambeth, and Greenwich. The 77 fatal cases of whooping-cough were 47 below the corrected average; this disease showed the highest proportional fatality in Fulham, Shoreditch, and Newington sanitary areas. The 67 deaths referred to enteric fever slightly exceeded the corrected average number; among the various sanitary areas the highest proportional fatality of "fever" was recorded in Hackney, Mild End Old Town, St. George Southwark, Rotherhithe, and Woolwich. The 449 fatal cases of diarrhœa were 77 above the corrected average; this disease was proportionally most fatal in St. Giles, Whitechapel, St. George-in-the-East, Limehouse, St. Saviour Southwark, Bermondsey, Woolwich, and Plumstead sanitary areas. In conclusion, it may be stated that the mortality in London during September from these principal zymotic diseases was rather more than 12 per cent. above the average.

Infant mortality in London during September, measured by the proportion of deaths under one year of age to registered births, was equal to 162 per 1000, and slightly exceeded the average. Among the various sanitary areas the lowest rates of infant mortality were recorded in Paddington, Islington, Strand, London City, St. Olave Southwark, and Rotherhithe; and the highest rates in Westminster, Holborn, Whitechapel, St. Saviour Southwark, St. George Southwark, and Plumstead.

THE SERVICES.

MOVEMENTS OF THE MEDICAL STAFF.

SURGEON-MAJOR-GENERAL LEWER has arrived in England from Gibraltar on retirement and will be succeeded by Surgeon-Colonel Catherwood. Surgeon-Captain Holt has been transferred from Aldershot to Sheerness. Surgeon-Major Inman has arrived from Barbados on leave. Surgeon-Captain Fletcher has arrived at Gibraltar. Surgeon-Lieutenants Smith, Blackham, and Fairrie have been posted to Aldershot; Surgeon-Lieutenants Forrest and Fawsett to Portsmouth; Surgeon-Lieutenants Greech and Grattan to Ireland; Surgeon-Lieutenant Profeit to Edinburgh, and Surgeon-Lieutenant Gunter to Shorncliffe.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Lieutenant C. B. Prall, 36th Sikhs, is appointed to officiate as Civil Surgeon of Peshawar, in addition to his other duties, vice Surgeon-Major B. Doyle, on leave. Surgeon-Major J. W. Clarkson is appointed to act as Sanitary Commissioner for the Government of Bombay during the absence on leave of Brigade-Surgeon-Lieutenant-Colonel C. W. MacRury. Surgeon-Major C. G. W. Lowdell is appointed to act as Deputy Sanitary Commissioner for the Western Registration District, in

addition to his own duties, from the date of Surgeon-Major J. W. Clarkson giving over charge. The services of Surgeon-Captain W. D. Sutherland and Surgeon-Captain H. E. Banatvala, which were placed temporarily at the disposal of the Chief Commissioner of the Central Provinces under the Home Department Notifications, are placed permanently at the disposal of the Chief Commissioner.

ARMY MEDICAL RESERVE OF OFFICERS.

The undermentioned Surgeon-Lieutenant-Colonels having exceeded the limit of age laid down in Article 663, Royal Warrant July 6th, 1895, cease to be Officers of the Army Medical Reserve of Officers:—Alexander R. Mackenzie, M.D., Thomas F. Greenwood, and Henry F. Holland, M.D., The undermentioned Surgeon-Lieutenants to be Surgeon-Captains:—John M. H. Martin, M.D., F.R.C.S. Eng., and David Todd.

MILITIA MEDICAL STAFF.

Surgeon-Lieutenant-Colonel T. F. Greenwood, 4th Battalion the Sherwood Foresters (Derbyshire Regiment), retires, with permission to retain his rank, and to wear the prescribed uniform on his retirement.

NAVAL MEDICAL SERVICE.

Staff-Surgeon John Anderson McAdam is promoted to the rank of Fleet-Surgeon.

The following appointments are notified:—Surgeons: S. H. Youel to the *Champion*, and T. C. Hickey to the *Repulse*.

VOLUNTEER CORPS.

Royal Engineers: 2nd West Riding of Yorkshire (Leeds): Surgeon-Captain C. Richardson to be Surgeon-Major. The Severn Division: Surgeon-Lieutenant W. L. Edwards to be Surgeon-Captain. *Rifle:* 4th Volunteer Battalion the Cameronians (Scottish Rifles): Surgeon-Lieutenant W. G. Marshall, M.B., resigns his commission. 1st (Inverness-shire Highland) Volunteer Battalion the Queen's Own Cameron Highlanders: Surgeon-Lieutenant W. de Watteville, M.B., to be Surgeon-Captain.

THE FRENCH IN MADAGASCAR.

It does not yet seem to be absolutely certain that the news of the capture of the capital of Madagascar and the flight of the Queen from Antananarivo is reliable. The French people have every reason, however, to hope and believe that General Duchesne's force has by this time reached and captured Antananarivo. The expedition was dispatched in the spring of this year and consisted of 15,000 men. The troops disembarked at Tamatave, a port on the north-east coast. The losses from fighting have been insignificant, the Hova army having offered little or no opposition to the French. Sickness arising from the bad climate on the coast, the difficulties of the march, the employment of troops in road-making, and the want of proper arrangements have been the principal causes of the grave losses that have attended the expedition. Antananarivo is some 4000 feet above the sea level, has a population of 100,000, and is a fairly well built city. It is said to be, and owing to its elevation most probably is, healthy. The sanitary state of General Duchesne's advanced force in the uplands is reported to be excellent. The French have no doubt had to encounter very serious obstacles and topographical as well as climatic difficulties. Once the troops get into quarters in the capital and are protected during the rainy season we may confidently expect better accounts. The invaliding arrangements do not seem to have been good, the losses on shipboard during the transit of the troops from Madagascar to France having been serious.

VOLUNTEER MEDICAL SERVICE.

Surgeon-Lieutenant-Colonel M. Baines, V.D., writes to us suggesting that, in the event of a commission being appointed to consider the various questions raised by the commanding officers of the Volunteer force, a request should be made for a small annual grant for the stretcher bearer section of each regiment. Ambulance work is not only important in times of war, but a knowledge of it even in times of peace is of considerable value, and the small grant suggested—namely, 7*s.* per efficient bearer—is insignificant when compared with the important *rôle* which stretcher bearers would play in case of war. The grant would be expended in providing all ambulance requisites and appliances necessary for the proper and satisfactory teaching of the various classes.

THE CAMPAIGN IN CUBA.

According to a Central News telegram there is a good deal of sickness among the Spanish troops in Cuba. Yellow fever is stated to be increasingly prevalent. Five hundred men have succumbed to that disease since March last, and there are 1000 patients in the various local hospitals.

THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Supplemental Fund, held on the 8th inst., Inspector-General T. Russel Pickthorn in the chair, the sum of £48 was distributed among the several applicants.

CADET BATTALIONS.

1st Cadet Battalion the Norfolk Regiment: Acting Surgeon H. W. Crosse, M.B., resigns his appointment.

Correspondence.

"Audi alteram partem."

"'RETURN' CASES OF SCARLET FEVER."

To the Editors of THE LANCET.

SIRS,—The origin of so-called "return cases" of scarlet fever, an instance of which forms the subject of a letter from Dr. Paget Thurstan in your last issue, is a matter of practical importance to the community apart from its purely scientific interest. In ascribing the source of infection to the night-gown which was handed to the mother on the return of the child after nine weeks' detention in hospital Dr. Thurstan appears to claim an explanation which the facts of the case hardly warrant. While expressing his belief that disinfection of the nightgown had been thoroughly and efficiently carried out, Dr. Thurstan inclines to the view that the linen had again become infected by its having been dried in an atmosphere charged with infection owing to its immediate proximity to the fever hospital. The explanation is, in view of collateral evidence, difficult to accept; for if the air in the drying-ground were infectious to this degree it would go hard with the inhabitants of the neighbouring tenements of which the back-yards, in respect of one large fever hospital, abut on the hospital premises. The yards referred to not only serve as the playground of the numerous young children living in these houses, but in them on washing day is invariably to be seen the household linen hanging out to dry. The distance separating the yards from the windows of the scarlet fever wards is only five or six yards—an interval considerably less than that which intervenes between the wards and the laundry drying-ground in most fever hospitals. Contrary, however, to what might be expected if the validity of Dr. Thurstan's belief be accepted, the incidence of scarlet fever amongst the inhabitants of these houses is no greater than it is in the parish at large. The experience derived from all fever hospitals goes to show that the infection of scarlet fever is incapable of transmission for any distance in the open, and there is little doubt that its rapid loss of virulence is to be ascribed to the destructive influence of light and air.

If we assume the infection of a "return case" to have been derived from the previous one, and are content to put aside the chance of coincidence in respect of an external source, there are certainly two modes of infection which, in most cases, are deserving of careful consideration. First, there is the possibility of some infected article having accidentally escaped disinfection at the hands of the sanitary officials, however careful they may have been in the discharge of their duties. On receipt of the news that the child is to be discharged from the hospital this article of clothing, book, or toy is forthwith brought out of the cupboard or drawer in which it has been lying and may then for the first time be in a position to infect some other member of the household. It is true that this channel of infection may be accountable for but few of the "return cases," but that it may be a practical factor is strongly suggested by the not very infrequent instances in which a second case arises within a few days of the *expected* return of the first, although the patient, owing to some cause or other, may have had to be detained for a further period in hospital and have not been sent home until a later date—in fact, not until after the second case has arisen. We never hear of this being quoted as a "return case" however. Even if it is possible to eliminate

this source of infection with certainty in Dr. Thurstan's case, there yet remains another very important one—viz., the patient himself, and it is quite possible that he may be the direct source of infection, coming, as he does, straight home from the ward of a fever hospital. The infectivity of scarlet fever desquamation is generally accepted, and also the danger attaching to the slightest discharge from either the ears or nose, which, in the opinion of those best qualified to form an opinion, is a far more fertile source of infection than the later desquamation. The belief is slowly gaining ground that even a healthy person, after a prolonged residence in a scarlet fever ward, is capable of imparting contagion by means of his breath for several days at least after passing out of his infected environment.

Until the day comes when a sterilisation of the respiratory passages of a living person becomes a practical possibility it is to be feared that "return cases" will from time to time occur. The remedy would seem to lie in a further isolation of the child for several days after his return home; but to provide the accommodation necessary to carry this out on a rational basis in respect to every patient before his discharge from the public fever hospitals would entail too heavy a burden upon the ratepayer.—I am, Sirs, yours truly,

F. FOORD CAIGER.

Fever Hospital, Stockwell, S.W., Oct. 8th, 1895.

"OVER-OPERATING IN GYNÆCOLOGY."

To the Editors of THE LANCET.

SIRS,—Mr. Lawson Tait would, I am sure, not wilfully mislead your readers, but his memory has been so inaccurate in reference to a case in which he mentions my name that I hope you will allow me to correct his statement. In a letter published in your columns on Sept. 21st he says: "We had under our joint care a lady who had a bleeding myoma and immense wealth. I had recommended removal of the appendages, a course not approved of by Sir William Priestley and not favoured by the patient and her friends, and therefore not pressed by me. The result was she remained under my care (occasionally when death from hæmorrhage was imminent joined by Sir William), and in bed most of the time, for about thirteen years, when the climacteric relieved her from the severe symptoms at the age of sixty-three or four. During that time her illness cost thousands of pounds, a proportionate share of which fell to the lot of Sir William Priestley and myself. If I had operated on her—with a bagatelle risk of 1·6 per cent. mortality—I should have had probably 150 guineas and Sir William Priestley about as much more at the end of a successful case (and I do not think a fatality would have altered the amount), or somewhere about a fifth of what we actually did get." The facts are these. 1. I met in January, 1881, Mr. Lawson Tait and the patient's medical man in the country to see a lady who had a moderate-sized myoma, and whom I had twice before seen in London. The patient was then fifty-three years of age, and, although still suffering from hæmorrhage, did not seem to me so much worse as to demand an operation. 2. In January, 1884, three years later, she came to London and then assured me that she had quite recovered some time before. The pain and hæmorrhage had ceased, and the myoma had almost disappeared. The patient was then fifty-six years of age and going about as usual. She is now sixty-seven and in good health. 3. I only saw the patient professionally once after my consultation with Mr. Tait, and this was alone in London. I received the ordinary fees for my visits, and, therefore, if thousands of pounds were expended in medical attendance they did not come to me.

I am, Sirs, yours sincerely,

WILLIAM O. PRIESTLEY.

Hertford-street, Mayfair, Oct. 5th, 1895.

To the Editors of THE LANCET.

SIRS,—The exceeding rancour with which Mr. John Frederick Bullar persecutes his next-door neighbour at Southampton confuses his mental perception. The mortality percentage I estimated for my case is obtained from a long series of similar cases (removal of the appendages for myoma), published in 1890, for of that series it would have formed one if operative measures had been adopted. Its mortality has nothing to do with the 15 per cent. of deaths in a series of cases of all kinds in the earliest practice of Mr. Bullar's neighbour. Again, Mr. Bullar forgets that removal of the appendages in these cases reveals no disease whatever in them in the great majority of cases, so that if he does know of such innocent appendages having been removed in Southampton, is he sure that there was no disease in the uterus for which the operation was done? On these three points Mr. Bullar has blundered; and, as he was one of my pupils, it is a great blow to my vanity that he attacks the doctrines of his master with paper clubs, doctrines of which at one time he knew so much and of which he was so proud.

I am, Sirs, yours faithfully,

7, Crescent, Birmingham, Oct. 7th, 1895. LAWSON TAIT.

"HOSPITAL ABUSE AT BRIGHTON."

To the Editors of THE LANCET.

SIRS,—With all due regard to the invaluable space in your columns I will ask you to allow me to briefly reply to the correspondents who have written refuting my statements on the abuse of hospitals at Brighton. According to both Dr. A. J. Richardson and the secretary of the Sussex County Hospital, 4 per cent. of the cases which were treated were not entitled to charity. This makes a total of 408 in one year for one hospital alone, which at the same ratio for all the other hospitals would amount to a considerable figure and give a living to three or four medical men. I quite admit that the hospitals most abused are those which are devoted to the treatment of special diseases. No one knows the extent of that abuse better than the general practitioner, and no investigation could be complete that does not include their evidence. In my original letter I stated that over one-third of the women who gave birth in 1894 were attended by one charity alone, and that does not include those attended in the union, or the others by the society for helping women in their first fall. Is it possible for so many women to be paupers? I do think that the Lying-in Institution should give some explanation, and I should like also to hear the opinion of the resident medical officers who have been attached to that charity. One of the midwives made a statement a short time ago that in her experience at least half the applicants were in a position to pay for private medical attendance. In your excellent leading article of Jan. 26th of this year you assert what is beyond dispute—namely, that if this gigantic system of abuse was stopped there would be ample means to meet the needs of the deserving poor. Though the wealth of the nation on the whole is progressing, and the position of the working man greatly improved, the increased figures of out-door and in-door attendances at our hospitals would, if the cases were all deserving of charity, go to prove that pauperism is in the ascendency. This matter may not affect those medical men who have been many years in practice in the town, but what about the young men struggling for a living in the paths of an honourable profession—have they not to be considered? I trust that our hospitals will go on extending their inestimable blessing to the poor in the hour of their sickness or injury, but let us at the same time face a great evil and see that charity is not misapplied. I am, Sirs, yours truly,

Hove, Oct. 7th, 1895. FRANCIS J. A. WARING.

"THE PHYSIOLOGY OF DEATH BY ELECTRIC SHOCK."

To the Editors of THE LANCET.

SIRS,—I have read with great interest Dr. Richard C. Shettle's second letter in THE LANCET of Sept. 28th upon "The Physiology of Death by Electric Shock." There is one point, however, which is not quite clear to me, and upon which I should like to ask for information. After very clearly describing the theory according to which "it is probable that the diamagnetic molecules in the living body are continuously rotating upon a definite axis, the axis of rotation in every case being determined by the relation which each form of matter has to the magnetic force," Dr. Shettle goes on to say: "In fact, it is clear that, under the known relations which exist between matter and the magnetic force, the only influence which magnetism can exercise upon the living body is to render the polarity of every atom engaged in the maintenance of life more marked, and therefore more capable of maintaining the phenomena which are naturally

evolved during life by the material elements." I venture to think that this can only be true as long as the living body is so placed in the magnetic field that the polarity induced by the latter coincides with the normal polarity of the molecules composing the former, and that, supposing Dr. Shettle's theory to be correct, it would be quite possible so to place the living body in relation to the magnetic field that the polarity induced by the one would be in direct opposition to that inherent in the other. Dr. Shettle considers, if I have followed his reasoning correctly, that this antagonism can result only in the deviation of the molecular axes from their original direction, much in the same way that a suspended magnetic needle is deflected upon the approach of a magnet, and that such deviation would have no appreciable effect upon the organism. Now, granting for a moment that no more complex result might be expected from the opposition of similar magnetic poles, is it reasonable to suppose that such a radical change of direction as the one under consideration could take place without causing some very distinct modification of the natural functions of the body? The fact that no such modification actually occurs when the living body is introduced into the most powerful magnetic field—no matter in what position the one may be placed in relation to the other—would appear, I think, to tell very strongly against the validity of Dr. Shettle's theory. I make these suggestions with the utmost reserve and solely with the object of obtaining information upon a subject in which I am much interested. At the same time, I am fully aware that the apparent difficulty may be owing entirely to my own imperfect knowledge and consequent failure to grasp the facts under consideration with the necessary clearness.

I am, Sirs, yours faithfully,

Hornsey, Oct. 5th, 1895. W. B. FOTHERINGHAM.

"PRECEPTS FOR CYCLISTS."

To the Editors of THE LANCET.

SIRS,—In the annotation on the above subject contained in the last issue of THE LANCET you unreservedly condemn the inclined posture adopted by the conventional "scorcher" on the ground of its being detrimental to health. Speaking as a cyclist of many years' experience, I have never been able to understand why this particular position should be condemned on hygienic grounds. I readily admit that it is ungraceful in the extreme, but it is certainly an error to suppose that it "rounds" the shoulders. On the contrary, the shoulders are held stiffly back in order to obtain a firm grip for the extraordinary muscles of respiration, and the bend is a hinge movement at the axis of the hip-joint and not a forward curvature of the spinal column. The error has probably arisen from the fact that this position throws into prominence any existing tendency to "round shoulders," in the causation of which it takes, however, no part. From a physiological point of view the "forward bend" is the best, in that it enables the rider greedy of speed to develop a maximum degree of effort with a minimum of distress. The truth of this statement is evidenced by the fact that all of us intuitively follow the "scorcher's" example under strain, as when climbing a hill or facing a head wind.

I am, Sirs, yours faithfully,

Oct. 7th, 1895. ALFRED S. GUBB, M.D. Paris.

"SKETCHES FROM RHENISH WATERING-PLACES."

To the Editors of THE LANCET.

SIRS,—Your Berlin correspondent omits to mention one of the most charming of the health resorts of the Rheingau. Having spent a month there this summer, I may perhaps be allowed to give your readers a brief account of Schlangenbad It is seven miles from Wiesbaden, four from Schwalbach, both of which are reached by carriage, and four from Eltville, where all the Rhine boats stop. There is now a steam tramway between Eltville and Schlangenbad, so that it is reached with the least possible trouble. The village lies in the forests of the Taunus, the surroundings are beautiful, walks through the woods having been carefully laid out in every direction, to Rauenthal (one mile and a half), Georgenborn (the same distance), and many other picturesque villages. There are a pretty little Kursaal, seven "Kurhäuser," several good hotels, and the expenses are very moderate. The baths are delicious; the chemical composition and medicinal properties of the waters have been fully described by the resident physician, Dr. Baumann. They seem specially suited to cases of neurasthenia or irritable nervous conditions, which respond very quickly to Schlangenbad treatment. It may have been the property of the baths or the early hours, regular life, and the restfulness of the sheltered walks, but more probably the result of all these factors, that produced such a rapid improvement in the neurotic patients that were sent there. Eczema and other skin affections were quickly cured by the baths. As far as I was able to judge these two classes of patients got the greatest advantage from Schlangenbad. For medical men and their families it is a charming pleasure resort, and easily reached. They are admitted free to the baths and are exempt from Kur tax. Shooting (stag, partridge, &c.) can easily be obtained in the neighbourhood; also good music, pleasant society, absolute rest if desired, or excursions in all directions, good food, and capital accommodation. What more could be desired either for summer holiday or health resort? All these advantages, and more, can be obtained in Schlangenbad. I am, Sirs, yours truly,

West Brighton, Oct. 7th, 1895. W. G. THISTLE.

ADVERTISING IN HIGH PLACES.

To the Editors of THE LANCET.

SIRS,—I see by the daily press that Dr. —— and also Dr. —— have returned to their respective homes after a brief holiday. As the leading men of the profession persist in setting such a noble example of professional etiquette to their humbler brethren, I intend in future to make a black list of these advertising gentlemen for my private use only, and to refrain from sending any of my patients to them when I desire the advice of a consultant. I think that if other general practitioners would do the same it might influence these gentlemen to some extent in self-advertisement. I am, Sirs, your obedient servant,

Oct. 8th, 1895. M.R.C.S.

HOTELS AND INFECTIOUS DISEASES.

To the Editors of THE LANCET.

SIRS,—I venture to ask you for the following information. Should a patient fall ill with diphtheria in a large and crowded London hotel, would he, after the case had been duly notified to the authorities, be compelled to leave the hotel at a few hours' notice and to be taken to the fever wards of a hospital? Would the patient or his family, if they refused to leave the hotel, be liable to be sued before court for damages caused to the hotel (in guests leaving &c.)? I have been placed in a very anxious position by a case of this kind happening to an English patient of mine at a Zürich hotel, and should be very glad to know how the authorities act in England under the same circumstances.

I am, Sirs, yours faithfully,

Oct. 1st, 1895. TURICENSIS.

*** There is no universal rule in England. Many provincial towns have no infectious hospitals to which such cases could be removed either compulsorily or voluntarily. And even where such hospitals exist, including the metropolis, there is no power of compulsory removal unless a magistrate's order for such removal is procured. The magistrate can issue this order on one or other of three conditions: 1. That the patient is "without proper lodging and accommodation." 2. That the patient is in a room occupied by members of more than one family. 3. That the patient is on board a ship. The first condition would be the one affecting a hotel, but the legal interpretation placed on it varies very much, some saying that the question of proper lodging, &c., must be decided on grounds of protecting the public; others, with probably more correctness, declaring that in view of the second condition it is the propriety of the lodging *qua* the patient that is in question, except where the room holds persons of another family. But, as a matter of fact, such cases are very generally, though not always, removed from hotels into hospital; for the London Fever Hospital has private rooms, which go far to remove the objection of the better classes to isolation in hospital.—ED. L.

AURI SACRA FAMES.

To the Editors of THE LANCET.

SIRS,—On returning to town after the vacation I met with a remarkable incident which seems to me to claim attention. The Royal Colleges of Physicians and Surgeons most liberally placed free of cost the Examination Halls on the Embankment at the disposal of the British Medical Association for the meetings of sections for reading and discussing scientific subjects. I hear, for I was not present, that almost the entire ground floor of this large building was occupied as a vast advertising ground for all kinds of drugs, instruments, &c.—so vast that the advertisers paid £1200 or £1500 to the Association. Of course, the Colleges are not responsible for this proceeding; their assent was not asked, and they have not received, and could not accept, any of the proceeds. The Colleges will no doubt take some notice of the matter when they meet. In the meantime allow me to suggest that the money thus obtained by the British Medical Association should be devoted to scientific purposes or given to some of the medical charities; at least, it cannot pass without question into the coffers of the Association.

I am, Sirs, yours obediently,

Oct. 5th, 1895. MEDICUS.

THE DRAINAGE OF PORTSMOUTH.

(FROM OUR SPECIAL CORRESPONDENT.)

MANY years have now passed since a general scheme for the drainage of Portsmouth was planned and carried out. This was done in 1866, and since that date the population of the town has greatly increased and sanitary science has made considerable progress. It is not probable that in these days the plans for draining Portsmouth which were accepted some thirty years ago would meet with approval. Judged in the light of modern science, extraordinary blunders were committed. The drainage scheme consisted of a high and a low level system. Both had their outfall in front of Fort Cumberland into the Langston Channel, where the sewage is rapidly carried out to Spithead. The high level system discharged by gravitation at the ebbing tide, and the sewage in the low level system had to be pumped up into the high level outfall. Both systems meet at a point to the east of the town called Highland Cottage and thence travel on to the pumping station, the low level main drain being five feet under the high level sewer. But even with the aid of the pumping the gradients are absurdly insufficient. It will scarcely be credited, but for a distance of 6685 feet the fall is barely equal to six inches in a mile; yet so as to secure even this mere semblance of gravitation there are parts of the main sewers which are only just under the surface of the streets. From 1866 to 1881 no less than 20,550 houses were connected with these sewers, and their inefficiency soon became manifest. A great portion of the main sewers were converted into sewage reservoirs. Here the sewage stagnated and formed deposits pending the time when the tide would be favourable to its discharge into the sea. Thus there was no constant flow in the sewers, and when heavy rains fell the sewers overflowed and flooded the basements of the houses. Then the sewers, already too small for the rapidly increasing population, became choked up by the sand and the deposits of all sorts which must naturally accumulate when sewage is allowed to stagnate. If to this is added the fact that improvement was necessary with respect to the scavenging or cleansing of the sewers by work of hand, it will be seen that the state of affairs would become absolutely intolerable. In 1881 the local authority were obliged to advertise for schemes likely to effect an improvement. Finally a proposal to build reservoirs was made by Sir Frederick Bramwell and adopted. Just by the outfall and in front of Fort Cumberland reservoirs that will hold 4,500,000 gallons have been constructed. As these discharge twice a day this means a total amount of 9,000,000 gallons of sewage that can be dealt with in the twenty-four hours before the sewers themselves become a reservoir for the holding of stagnant sewage. Under these circumstances the flow of the sewage should not be interrupted. Nevertheless, though these reservoirs have considerably improved matters, the drainage is still unsatisfactory. The gradients remain altogether insufficient and therefore the sewers are very far from being self-cleansing. Then some of the sewers were built of such porous material that a very large quantity of sea water percolates through their walls. With spring tides the low level sewers, that are little better than mere sieves, have brought down to the pumping station 3,000,000 gallons of sea water. The town has been put to the expense of raising this enormous volume of sea water, not a drop of which ought to have gained admittance to the sewers. When the cost in the wear and tear of expensive machinery and the consumption of valuable fuel which the raising of 3,000,000 gallons of water involves are considered it will be realised what an extravagant waste is thus occasioned.

Owing to the presence of a large quantity of sea water in the sewers and the increase of population and the area drained, there is, especially during heavy rains, more sewage than the reservoirs can hold. Consequently, of two evils one must occur: either the sewers must again become reservoirs holding stagnant sewage or else some of the sewage must be discharged into the sea at unsuitable periods of the tide. But even if this difficulty at the outfall did not exist, still the drainage would not be properly effected, because the sewers are too small for the large volume of water which now reaches them during heavy rains. The gradients being so slight, the sewage cannot flow with sufficient rapidity to the outfall to relieve the more distant portions of the town. Therefore the sewers will be found to be quite full in one part of the town, while nearer to the outfall they are only two-thirds full. Last autumn a number of cellars were flooded in the town and this at a time when the main sewer near the outfall was only two-thirds full. Then at one place where the main sewer receives sewage from three local collectors the main sewer is so small that it can only hold half the amount of sewage which the three collectors are capable of delivering. It is as if one tried to empty two pints into a one-pint measure. Under the stress of these circumstances, and at the suggestion of the borough engineer, Mr. Philip Munch, a sum of £30,000 has been voted and is now being expended so as to deal separately with the rain water. Some eight or nine years ago a separate system was instituted in the Stamshaw district. This was a newly created quarter covering some thirty acres of ground adjoining the Landport district. The method adopted is to drain the rain water from the streets and from the front roofs and fronts of the houses into a separate sewer which has its outfall at the nearest convenient point, either in the harbour or in the sea. The water from the backs of the houses and the backyards, which is likely to be fouler, together with the domestic drainage or sewage proper, will continue to flow into the old sewers. Only the cleanest portion of the rain water will reach the supplementary or separate sewers that are in course of construction. It is confidently expected that this rain water will be clean enough not to cause any nuisance in the harbour or on the beach. An outfall at Flathouse will discharge into the harbour the drainage of eighty acres of roadways and frontage. The drainage from ninety acres of frontage and roads will fall into the Camber, and thence will flow to the harbour mouth. Forty more acres of Portsea and forty acres of the old town of Portsmouth will also be thus drained into the Camber. The distances being short the difficulty of obtaining proper levels is not great. Where the natural levels are insufficient a gradient for such short distances can be created by digging deeper in the roadways. Catch-pits are contrived to prevent sand and grit from entering these sewers. In the districts where the system has been already applied it has worked well and caused no inconvenience. When thus in part relieved from the pressure of rain water it is anticipated that the old drainage system of Portsmouth will work much better, and that the distress caused by the flooding of cellars and basements by sewage will be avoided. Nevertheless, the drainage of the town can never be satisfactory so long as the sewers are not self-cleansing; nor can they become so while the gradients are too slight to admit of a rapid flow of the sewage. There is but one way of draining a flat town, and that is by raising the sewage frequently and at short intervals. There must be, not one pumping station, but many pumping or raising stations. Then, if the pumping stations are near enough, a gradient may be created by digging down to these various elevating stations. It is most unfortunate that so important a town as Portsmouth should have been drained, and this at a great expense, in a manner that was not in keeping with these fundamental principles, for it seems as if the work will sooner or latter have to be done all over again.

Portsmouth.

THE BATTLE OF THE CLUBS.

(FROM OUR SPECIAL COMMISSIONER.)

(*Continued from p. 877.*)

"SWEATING" MEDICAL MEN AT LINCOLN.

A MEDICAL SOCIETY was formed at Lincoln in the year 1863. This society met once in the winter. Scientific papers were read, and then the members had supper with the president. In the summer the members met again, went to the country, and had a picnic. This was very pleasant, but it scarcely constituted a bond of union of sufficient strength to resist the encroachments of the formidable benefit societies that flourish at Lincoln. Now, however, the medical society meets once a month, and not only are scientific papers read, but professional interests are discussed. The subject of the benefit clubs has been for some time a matter frequently mentioned; but as some of the members of the Medical Society are sometimes called in to consult with the benefit club medical officers they did not altogether approve of the energetic manner in which these institutions were attacked. Nevertheless, as the grievance became more and more evident, the necessity of taking action was ultimately acknowledged. On Feb. 27th last Dr. Mounsey called attention to the fact that many opulent tradesmen were obtaining medical aid from the benefit clubs, and it was decided to hold a general meeting of the whole of the profession in and about Lincoln on March 8th. At this meeting a resolution was adopted and sent to the British Medical Association; and a petition signed by all present was sent to the General Medical Council. Twenty-five Lincoln practitioners and nine practitioners from the surrounding districts signed this petition. It was worded as follows and sets forth briefly the grievances of the Lincoln practitioners, whose signatures follow:—

"To the General Council of Medical Education and Registration.

"GENTLEMEN,—We, the undersigned general practitioners of the city of Lincoln and neighbourhood, humbly beg to call the attention of the General Medical Council to the following facts, viz.:—

"1. That there are in Lincoln two medical aid associations called the United Friendly Societies and the Manchester Unity of Oddfellows, employing respectively three and two qualified practitioners at fixed salaries.

"2. That these medical officers do not receive the full amount paid by the members for medical attendance.

"3. That these associations canvass for members.

"4. That a large number of leading tradesmen and well-to-do men of independent means avail themselves of the advantages of these institutions at the low rates of 3*s.* 6*d.* per annum per member, with an addition of 8*s.* per annum for wife and any number of children under the age of sixteen.

"5. That the number of these institutions is on the increase, and obtains not only in this city but in the clubs in the neighbouring villages.

"We submit that this state of matters is calculated to degrade the medical profession, and we humbly pray that your honourable Council will frame measures to check these abuses.

(Signed)

"G. Mitchinson,	John T. Collier,
J. G. Watkins,	Fred. S. Gurney,
W. A. Carline,	Fred. S. Lambert,
Leslie H. Revill,	E. Mansel Sympson,
A. P. Russell,	Horace Rainbird,
Wm. H. B. Brook,	Albert Louis Peacock,
W. J. Cant,	F. J. Mason,
T. H. White,	A. E. Boot,
C. Harrison,	Godfrey F. R. Lowe,
J. H. Pim,	Arthur H. Lowe,
G. H. Mounsey,	G. Parson Forney,
F. C. P. Howes,	S. R. Deane,
Charles G. Dalton,	Osborne Johnson,
F. Bastow Cooper,	Henry Johnson,
Wm. Swan,	J. D. Cambell,
Edward C. Palmer,	C. Brook,
George S. Boulton,	G. M. Lowe."

In answer to the above petition the officials of the General Medical Council sent three copies of the minutes of evidence taken on the question when the Council held an inquiry on this subject some three years ago. In this connexion it is important to bear in mind that, when the various benefit societies federated together to form the Lincoln United Friendly Societies Dispensary, they requested the General Medical Council to send a representative to see that the new system of medical aid should be organised on proper lines. The position here at Lincoln is altogether different from what I have described as existing at Portsmouth and at Eastbourne. At Lincoln five medical men are employed exclusively by the Manchester Unity of Oddfellows and by the United Friendly Societies Dispensary. These medical men receive a fixed salary and are not allowed to have any private practice. Now when this system was first instituted the representative of the General Medical Council especially stipulated, and it was agreed, that no profit should be made out of the work of the medical men employed by these benefit societies. It is, however, easy to prove, from published balance sheets, that this condition has not been observed and that profits have been made out of the medical men. It was understood that the managing committees were to work for nothing, or, in any case, were not to pay themselves out of the fees given for medical aid. The General Medical Council should know that this rule, which they themselves established, has not been observed. Facts and figures bearing on this point were published by the *Lincolnshire Echo* of Feb. 15th, 1895, which quotes THE LANCET on this subject. Then I find in the sixteenth annual report of the Friendly Societies' Medical Alliance that, in the year 1894, the Manchester Unity of Oddfellows had 4889 members in Lincoln who, between them, had in the course of the year 24,173 medical consultations, 31,431 prescriptions, and 6934 medical visits. There were 58 deaths. The subscriptions paid for medical aid amounted to £989, though the amount received by the medical men was only £381. The dispensers were paid £116, cab fares absorbed £65, drugs £161, and £32 were paid to the secretary, treasurer, and committeemen. This equals a total expenditure of £758 and leaves a balance on the receipts of £231. The two medical men in the service of this society naturally expected that this sum would be divided between them, since it was stipulated that no profit should be made out of the medical men. This, however, has not been done. The Manchester Unity of Oddfellows has simply pocketed a large proportion of the money made by the medical men in its service. This profit has been literally sweated out of the two medical officers. These officers had given, in the course of the year, 31,107 consultations and visits, and they have received for this enormous amount of work £384. These show that they have been attending patients for an average fee of a fraction under 3*d.* per visit or consultation. By paying them only £384 the society has made a profit of £231. The profits sweated out of the medical officers amount to nearly two-thirds of the sum it paid them. The sweating Jew tailors in the East-end of London do not make as much out of their victims, and yet it was agreed with the representative of the General Medical Council that no profit should be made out of the medical men. Further, it should be noted that I have reckoned in this calculation the £32 given to the secretary, treasurer, and committee as legitimate working expenses, though it had been understood that the committees should work for nothing.

The United Friendly Societies Dispensary employs three medical officers. They had in 1894, children included, 4398 members. The medical officers gave 16,763 consultations, 27,255 prescriptions, and 7815 visits. There were 40 deaths. The receipts amounted to £917; the salaries to the three medical men were £478, £57 were paid to the dispenser, £48 were spent in cab fares, £186 in drugs, and £14 in fees to the secretary, treasurer, and committee. Thus the total expenditure was £783, and as the receipts are set down at £917 it would seem that the net profits amounted to £134. To produce this profit the medical men in the service of this society have had to give consultations and advice at an all-round average of a fraction above 4½*d.* per visit or consultation. It is surely time that some authoritative expression of opinion should be obtained as to this sweating of profits out of the underpaid labour of medical men. It may well be asked how the dignity of the profession can be maintained under such conditions. At the other towns I have visited the average amount received per consultation was as low, in some instances, as 4*d.*, but the remuneration, such as it was, all went to the medical officer, and the society did not make a profit out of it. Also the medical officer derived indirect advantages—his club work brought him private practice which paid much better; while here at Lincoln the five club medical officers are by their contract debarred from accepting private practice. Further, if the number of members increases their work increases in due proportion, but their salaries do not increase, nor do they enjoy any measure of independence. They are the paid servants of a society represented by a committee, and are ever at the beck and call, not of one master, but of a whole committee. If any member thinks he has been neglected the medical officer has to appear before this committee, and a body of tradesmen and workmen

sits in judgment upon him and decides whether he has treated a medical case with proper discernment and attention. How can such a committee express an opinion on such a subject? Many a practitioner, after a little experience of this sort of work, has thrown up the post in disgust; but there are others who are not in a position to venture on following this good example.

If the medical officers are poorly paid, the sum allowed for drugs is not more liberal. On a previous occasion THE LANCET pointed out that the £161 paid by the Manchester Unity at Lincoln for 31,431 prescriptions meant an average of a fraction over a penny per bottle for medicine, and expressed the opinion that this seemed "hardly compatible with power and effect in dealing with the varied and often dangerous phases of disease." Thereupon Mr. William Coulson, secretary of the Lincoln Oddfellows' Medical Institution, wrote to the *Lincolnshire Echo* that drugs of the very best quality only were purchased from one of the best wholesale houses in the country. He added that the medical officers' instructions from the committee were not to spare expense, but to provide the patients with the medicaments they required. This does not, however, do away with the fact that many patients are treated with a few stock prescriptions which are kept ready made up and which usually contain cheap and ordinary remedies. It could not be otherwise. Even if money was forthcoming for special prescriptions there would not be time to write out a prescription, and still less time to have it made up. There are often sixty, and sometimes eighty, patients waiting for advice at these dispensaries. There may be two medical men to receive them, but often there is only one medical man present. Indeed, I was assured that one of the medical officers had said that he had seen sixty patients in an hour. The more carefully this matter is studied the more evident it will become that the grievances are not only on the side of the medical men. Reform is urgently needed, not only in defence of the reputation and material interests of the medical profession, but also for the sake of the members, especially the poorer members, of the benefit societies themselves.

Lincoln, Oct. 7th.

(To be continued.)

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Manchester Museum.

THE subject of a grant to the museum was resumed at the last meeting of the City Council. It may be remembered that several years ago the Natural History Museum, as it was called, obtained an asylum at Owens College at considerable cost to the College, and that the Corporation was memorialised several months ago for a grant in aid of its maintenance. The Free Libraries Committee recommended a grant of £400 a year if the county councils of Lancashire and Cheshire and some of the local district councils would give £800. An amendment was moved, and has been accepted by the committee, that this condition should not be attached to the grant. It was discouraging to observe the narrow and short-sighted view taken by several members of the council as to the value of such an institution to the people of Manchester and the district round, illustrating, as the museum does, every branch of natural history in its widest sense. One who had been a city father for ten years had only known of the museum in connexion with Owens College since the question was introduced. Another said "there were museums enough in Manchester," though as to where they would be found he did not enlighten the council, but he showed his special fitness to give an opinion by saying "he had never been in the museum at all." It will scarcely be believed but this gentleman has had all the advantage he could derive from an average middle-class education. It was said, moreover, "the museum was not one that would attract the masses of people; it was merely a museum for students." No doubt the masses might be more attracted by steam-organs and merry-go-rounds, but they are provided elsewhere. Then, too, the raising of the rates that would be caused by this £400 divided among 500,000 people, and the grave prospect of "setting a dangerous precedent," were duly held forth *in terrorem*. And so this humiliating discussion proceeded. Alderman Thompson said truly "there was nothing more painful than this exhibition of utter indifference on the part of the council to higher education." He showed that the museum was really for the public, and was not required for the students of the College. "The medical men did not need it because they had a museum of their own, and the arts people did not need it, neither did the electricians nor the chemists, because they also had museums of their own." He contrasted Liverpool with Manchester greatly to the disadvantage of the latter, showing that the former gave grants to various departments of higher education of £1800 a year, while "the Owens College authorities were taunted because they asked for a miserable £400 a year." The discussion was again adjourned for a fortnight.

Gift to the Free Library.

It must not be supposed from the above-mentioned discussion in the City Council that Manchester has no regard for science or literature. The late Mr. Alexander Ireland, who died some short time since, was a great lover of literature and had a wide acquaintance with the literary men of the last generation. He had a special fondness for the works of Hazlitt, Leigh Hunt, Lamb, Carlyle, and Emerson, and with most of these authors he was on terms of personal friendship. He was a diligent collector, and left at his death 360 volumes of their writings, with various manuscripts, including the original one of Mrs. Ireland's life of Mrs. Carlyle. They were bought by Mr. T. R. Wilkinson, who has generously presented them to the Free Library. In his letter to the chairman of the committee he says: "I wish to present this collection, with the book-case which holds it, to my native city; and I venture to express the hope that it may be kept together in the city library as a memorial of our late dear old friend and citizen, Alexander Ireland."

Manufacture of Explosives.

The City Council was somewhat exercised at its last meeting as to the proposed establishment of an explosives factory in Ardwick, a densely populated part of Manchester. An application for a licence led to a local inquiry, when it was decided that such a licence ought not to be granted. The tradesmen, shopkeepers, and property owners believed that a great danger would be caused by the carrying on of such a manufacture in their midst. The applicants appealed to the Home Secretary, who came to the decision, "in accordance with the opinion of his technical advisers," that there would be no risk of explosion, "but at the worst of conflagration," "with the variety and quantity of nitro-cotton to which, by the draft licence, Messrs. Moseley are limited." The Watch Committee protested, and justified their objections to the licence by the general alarm and by the depreciation in the value of the surrounding property. It was moved and carried that the Home Secretary should be further communicated with. The insurance offices are evidently not of the opinion of the "technical advisers," for it is said that notices have been sent to the neighbouring business men and property owners of an increase of 50 per cent., and in one case of 100 per cent., in their insurance premiums. It seems rather hard for the neighbourhood to be exposed to increased risk of fire, and so to increased risk of life, even if the technical advisers think they will not be blown up. But in yesterday's papers Messrs. Moseley say that the preparation they make and use of collodion cotton is not explosive, and is only in a slight and slow degree inflammable. The material to be manufactured is called pegamoid, and is said to be of almost universal application in connexion with the textile fabrics. They say that Colonel Majendie, the Chief Inspector, came down and saw the buildings, the mode of manufacture, and the article pegamoid in its various preliminary states and in its finished condition. Shortly afterwards they heard the licence was confirmed, so that presumably he was satisfied. But this morning's papers contain letters from important firms which seem to show there are just grounds for alarm. It seems that permission has been obtained to store 800 lb. of gun-cotton, and if the "small fires" which Messrs. Moseley admitted at the public inquiry had happened should again occur the people of Ardwick may be excused for feeling some anxiety. There is a feeling in the council that the Home Office should not have thus over-ridden the action of the Watch Committee.

Medical Dinner.

The annual dinner of the Owens College and the Manchester Royal Infirmary was held on Thursday last at the Queen's Hotel, under the presidency of Mr. G. W. Mould. The Lord Mayor of Manchester and the Mayor of Salford,

Mr. E. S. Heywood (chairman of the Infirmary Board), Alderman J. Thompson (treasurer of the Owens College), Mr. J. W. Maclure, M.P., and Dr. Robert Maguire, an old Manchester student, were among the guests. In proposing the toast of "The Lord Mayor and Corporation of Manchester and the Mayor and Corporation of Salford," Mr. Mould took occasion to remark how greatly the health and happiness of the community depended on those important sanitary measures, provident and protective, which were so ably devised and carried out by our local legislators. The toast of "The Manchester Medical School" was responded to by Professor Young, the Dean, who referred to the unrivalled facilities for work given by the new buildings and to the very large entry of medical students this session. Mr. Thomas Jones, professor in surgery, in speaking to the toast of "The Manchester Royal Infirmary," contrasted the present building with the modern palatial structures found in almost all other large towns, as, e.g., Liverpool and Derby, and suggested that the enterprise which produced the Ship Canal and brought water from Thirlmere should give to Manchester a building worthy of the city. Dr. Little proposed "Our Guests," which was responded to by Mr. Maclure and Dr. Robert Maguire. The health of "The President" was proposed with much grace and feeling by Mr. E. S. Heywood, and was most enthusiastically received. Mr. Mould's reply was followed by some music, and a very pleasant evening came to a close.

A Police-constable and First Aid.

Mr. Gilbert has said, "A policeman's lot is not a happy one," so that one is glad to record anything that may tend to lighten it. An inquest was held on Friday last, at the Eccles and Patricroft Hospital, on the body of a man who had been run over after falling from a lorry. He was seriously injured about the left thigh, and Police-constable Crawford, who was near at hand, promptly rendered first aid by stopping the bleeding, and then removed him in the mail-coach from Manchester, which was passing at the time, to the hospital, where amputation was found to be necessary. But the man sank and died next morning. The jury returned a verdict of "Accidental death," and added that they desired to express their high appreciation of the prompt and skilful first aid rendered by Police-constable Crawford, "by means of which the deceased's life was probably prolonged until efficient medical aid could be procured." They further recommended his action to the notice of the Chief Constable.

Manchester Sewage.

The Mersey and Irwell joint committee yesterday granted a further period of six months to Manchester for the completion of her sewage scheme. From a statement made by the city surveyor it seems that "the amount actually paid up to the 19th ult. by the Corporation was £556,540 17*s.* 3*d.* The total estimated cost of the existing works was £700,000, and, roughly speaking, there was about £100,000 worth of work in course of construction." If no difficulties were met with it would take at least twelve months to complete the work. A portion of the sewage is treated at the filter beds at Davyhulme, and Sir H. Roscoe said the effluent was of an exceptionally good character, for not only was the whole of the polluting organic matter destroyed, "but the water contained what was always looked upon as a sign of purity, a certain amount of free oxygen." Formerly the sewage had flowed [continuously on to the filter beds, but now after some hours the flow was stopped and the air allowed to percolate through the mass. "This appeared to be essential to get the right action of the nitrogenous microbes, which really did the work." There is also in operation a costly and elaborate plant for the chemical treatment of the sewage and for sludge pressing, and additional land has been reserved for future tank extension if the present tank capacity should be found insufficient. At present thirty acres are devoted to the filter beds—not enough to deal with the whole of the sewage; but the Local Government Board has sanctioned the sum of £25,000 for the construction of the first section of artificial filters on sixty additional acres, which, according to the experts, will be sufficient. The construction of two experimental filters has been sanctioned in order to have a practical demonstration of the treatment of the Manchester sewage on the system proposed by the London County Council. The London sewage reaches the works at Barking in a putrid condition, and it is a question not yet decided as to whether the system is equally applicable to the sewage of Manchester, which enters the works in a practically fresh state.

Oct. 8th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Royal Infirmary, Newcastle-on-Tyne: the Site Question.

THE town council has decided, and almost unanimously, to refuse the request of the governors of the infirmary for an extension of their present site, on the grounds that the accommodation for the pigs and sheep would be curtailed. Many people in Newcastle are of opinion that the cattle market should be removed from the centre of the town, but the present members of the town council evidently do not think that it would be advantageous. Not so very long ago a bull in one of the main thoroughfares of the town gored a boy, tearing out parts of three or four ribs, opening up his pericardium and exposing his heart. In another instance a bull thrust his horn into the knee-joint of a lad and tore it open, necessitating amputation of the limb. Both these cases were treated in the infirmary, but very little was heard of them or of other severe and sometimes fatal accidents due to the driving of cattle through the main thoroughfares of the city. No doubt if the mayor or other prominent citizen had been the unfortunate victim a good deal would have been heard of the inconvenience and danger of continuing to hold a large cattle market in the very centre of a populous city. In its annotation upon the action of the town council the *Newcastle Daily Journal* writes: "We agree with Mr. Alderman Richardson and Alderman Stevens that the tone and attitude of the council towards the infirmary are much less sympathetic than they ought to be. It may be quite true that the council is not officially concerned in finding a new site for the infirmary, but morally there is no higher responsibility devolving upon it than to assist an institution like this in performing its invaluable functions in an efficient manner. The finances of the institution are not in a condition to allow of an expensive site being acquired, and unless the corporation grant its assistance the work of the infirmary must be crippled." The city council always expresses its anxiety to help the infirmary in its present strait; hitherto the outcome of its desire to assist has been that it has refused every application made to it, and last week it determined not to appoint any member of its body to form a joint committee with representatives from the infirmary committee to confer together as to the best method of procuring a new or an enlarged site, on the ground that it was no part of the town council's duty to provide, or to assist in providing, a site for the infirmary. This is a very different spirit to that which animated the town council 150 years ago; then a site was given to the infirmary by the corporation. The position the town council is now taking up is not, to say the least of it, a sympathetic one.

Destruction by Fire of the Old Mansion House, Newcastle-on-Tyne.

During the evening of Sunday, Oct. 6th—the anniversary, curiously enough, of the great fire in the same locality thirty-one years ago—the old Mansion House was found to be on fire. It was in use as a storage for oil, and in it were 1000 barrels of oil. Fortunately, with the exception of some timber in immediate proximity which was burnt, no damage, beyond the destruction of the building and its contents, was done. The old Mansion House, including a valuable collection of City plate and an extensive cellar of wine, was sold by auction in the year 1837. The ancient building was a quay-side feature, and is immortalised in John Shield's well-known song of "My Lord Size."

Newcastle-on-Tyne.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Lunacy in Scotland.

THE recent report of Mr. Carswell, certifying physician under the Barony Parish Council, Glasgow, contains further evidence in support of the statement that lunacy is not increasing in Scotland out of proportion to the growth of the population. The Barony parish includes a very extensive area, and the social condition of those inhabiting it is marked by great steadiness; indeed, it was selected some little time ago by Sir Arthur Mitchell as the district most suitable for the purpose of conducting an exhaustive inquiry into the alleged increase of insanity. Mr. Carswell's statistics show that though the number of certified lunatics has

risen from 135 in 1890 to 148 in 1895, the corresponding proportions per 100,000 of population are 44·7 and 45·1. The conclusions are practically identical with those arrived at by Sir Arthur Mitchell, whose inquiry embraced the ten years from 1883 to 1892. There are two reasons which combine to explain the increased number of pauper lunatics. In the first place it is shown that the lunatics do not as a rule recover to such an extent as to justify their discharge, whilst under the present system of treatment their lives are prolonged.

Glasgow Medico-Chirurgical Society.

The first meeting of this society for the session 1895–6 was held on the 4th inst., the President, Dr. W. L. Reid, being in the chair. It was decided to record an expression of regret at the death of Dr. J. H. Carslaw, who had reported the proceedings of the society in the *Glasgow Medical Journal* during the last four sessions. Dr. C. O. Hawthorne showed—(1) a brain with a recent hæmorrhage into the pons and cerebellum; (2) a female patient aged eleven years with considerable enlargement of the spleen, the history showing recurrent attacks of purpura, but none of the incidents usually associated with splenic enlargement; and (3) a man in whom the left brachial artery divided some distance above the level of the elbow-joint, the ulnar artery from this abnormally high origin passing in front of the muscles arising from the internal condyle and the fascia of the forearm. Dr. Hinshelwood read a paper on Word Blindness and Visual Memory, in which he narrated two cases he had seen, there being in one patient blindness to letters but not to figures, whilst the other suffered from object blindness.

Resignation of a Medical Officer.

Mr. W. A. Algie, Portpatrick, has intimated to the parish council his resignation as medical officer of the parish.

Home for Infirm Children, Glasgow.

In the annual report of the medical officer, Mr. Wilson Bruce, it is stated that the children admitted during the past year have on the whole been more acutely ill than in previous years, and that the deaths have consequently been more numerous; at times, too, there has been great pressure on the accommodation provided. A considerable piece of ground adjacent to the home has recently been purchased by the directors, and it is intended in December next to hold a bazaar with a view to improve the financial position of the home.

Faculty of Physicians and Surgeons, Glasgow.

At a meeting of the Faculty on the 7th inst. Mr. John Brown, M.D., and Mr. John M. Munro Kerr, M.B., having passed the necessary examinations and been elected, were admitted Fellows of the Faculty.

The Pollution of the Gareloch.

The Dumbarton county council some months ago appointed Mr. F. C. Buchanan, convener of the Public Health Committee, and Dr. John C. McVail as a sub-committee to report upon the condition of the foreshores of the Gareloch, one of the most picturesque of the lochs communicating with the estuary of the Clyde. These gentlemen have just issued an elaborate report, in which they find that the insanitary state of the foreshore is due to—(1) drainage from the dwelling-houses on the shores of the loch and (2) pollution by vessels anchored in, or plying on, the loch. They express the opinion that some remedy must speedily be found if the district is to maintain its position as a residential neighbourhood and favourite summer resort, and recommend that the Secretary for Scotland should be petitioned either to declare the loch a stream under the Rivers Pollution Act or to sanction by-laws giving the local authority power to prevent the deposit of solid refuse on the foreshore and the introduction of untreated sewage into the loch. This report has been adopted by the county council.

Aberdeen District Nursing Association Bazaar.

The total receipts at this two days' bazaar amounted (including £404 10*s.* 6*d.* of donations) to £1506 11*s.* 6*d.* Lady Gordon Cathcart opened the bazaar on the first day. On the second day Lady Kintore performed this function, being introduced by Dr. Angus Fraser, President of the Association. A vote of thanks was passed to Dr. Fraser. The Marchioness of Lorne sent a number of valuable gifts. In one of the two drawings—that for a picture of a Surrey landscape—Dr. Marshall, North Queensferry, was the winner.

Oct. 8th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The New Dublin Hospital for Infectious Disease.

AT a meeting of the guardians of the Rathdown Union on the 2nd inst., Viscount Powerscourt, K.P., in the chair, a letter was read from the Public Health Committee, Dublin, requesting the guardians to send a deputation to the conference which is to be held in the office of the committee at Cort's-hill, on Thursday next, Oct. 10th, "to consider the advisability of erecting a hospital in some rural district for the purpose of isolation in cases of infectious disease." A deputation, consisting of five of the guardians with their medical officer, Dr. Hamilton, was appointed to attend the conference. The necessity for the proposed hospital is now fully recognised, for, although the fever hospital at Cork-street was of immense service to the inhabitants of Dublin during the recent epidemic of small-pox, the undesirability of having an institution situated in a crowded part of the town for isolation of infectious disease is shown by the facts which have recently transpired, from which it would appear that, notwithstanding every precaution, the area of the city surrounding that hospital suffered more severely from the disease than elsewhere.

The Children's Hospital, Temple-street, Dublin.

The Medical Board at their last meeting appointed Mr. Herbert Mooney, M.B., F.R.C.S.I., to be ophthalmic surgeon to the institution.

A New Dublin Dispensary.

At a meeting of the guardians of the South Dublin Union on the 3rd inst. a letter was read from the Local Government Board in reference to the proposed erection of a new dispensary at Castle-street, which stated that the building, as shown by the plans, was of too elaborate a character for the requirements of the district. Its cost, as was noted, would probably amount to £4000, which would entail an annual payment of over £200 on the district. The Local Government Board requested the guardians to reconsider their proposed plans, and apparently with good reasons, for many complaints have been made of late years by the highly-taxed citizens of South Dublin, while it is notorious that many of them have ceased to rent houses in the city and removed to the adjoining townships. The consideration of the letter was adjourned until the next board meeting.

The Amalgamation of Irish Poor-law Unions.

At the present time in Ireland the whole question of the Poor-law management is causing very great discussion. In THE LANCET attention has been already drawn to the union infirmaries, but another point is cropping up and is being ventilated in the public press and boards of guardians, and that is the amalgamation of the Poor-law unions. There can be no doubt that the amalgamation of neighbouring unions would cut down very much present expenses, a matter of no small moment just now in a country like Ireland, where agricultural depression is making the rural lot of the taxpayers a very heavy one. In favour of this policy of amalgamation it may be pointed out that the number of inmates in many of the provincial unions is much smaller than the number for which the workhouses were originally built. Thus, as pointed out by a writer in the *Freeman's Journal*, there were at the commencement of the year (September, 1893, to September, 1894) in the Lisburn Union 144 inmates in a workhouse originally built for 800; 230 in Armagh, which was built for 1000 inmates; and 382 in Tralee, which can accommodate 1000. Again, the question of expenditure for the indoor maintenance of the residents and the cost of salaries and rations bears a curious relationship. Thus in Ulster the indoor maintenance is £65,851, while the salaries and rations of officers cost £32,919; in Munster the relationship is £120,464 to £46,742; in Leinster, £131,469 to £46,823, while in Connaught it is £34,736 to £17,973; in other words, the total sum spent in Ireland on the salaries and rations of officers in the four provinces is £144,457, while that spent on indoor maintenance is £356,520, or, to put it another way, the cost of the salaries is about 40 per cent. of the actual cost of indoor relief. It is evident, therefore, that if there was amalgamation of two adjacent unions which are now not at all full, probably in many cases without any enlargement of the existing buildings one of

these workhouses would accommodate all the inmates, and there would be an immense saving in the expense of salaries. At present if a union desires amalgamation with a neighbouring one the guardians apply to the Local Government Board, who send down an inspector to take evidence, which he lays before the Local Government Board, who have the power to issue an order for the amalgamation of the two unions if they think it desirable. Of course, to this system of amalgamation of unions there are the obvious objections that those in the employment of the unions must be thrown out of work, and undoubtedly this would have to be met by the consideration of vested interests. But one thing is evident—a complete change will have to be made in the present Poor-law system in Ireland, and if Mr. Gerald Balfour grants a commission to consider the matter the subject of the amalgamation of unions will undoubtedly be thoroughly considered. In the cities such as Dublin and Belfast the workhouses are much more crowded (indeed, some would say overcrowded) than in the provincial districts.

The Report of the Treasury Committee on the Retirement of Professors of the Irish Queen's Colleges.

Some of the evidence given before the committee recently inquiring into the question of the retirement of Queen's College professors is of considerable importance to the medical profession. It may not be generally known that medical professors who engage in private practice are not entitled to pensions, on the ground that they do not devote the whole of their time to the College, though, as one witness pointed out, the council of the College can and does call on them to give all the time to their professorial work which the interests of the College may require. Emphasis was also laid on the fact that the practical experience gained by those professors whilst engaged in their private practice is a very distinct advantage to the College, as it enables them all the more readily to keep pace with the advance of medical science; and it was very aptly suggested that the clinical hospital is to the medical professor what the laboratory or museum is to the Arts professor. It is very gratifying to find that the three presidents and the professors representing the three colleges were all unanimous in urging that justice should be done to the medical professors in the matter of pensions. This is all the more remarkable as none of the witnesses are directly connected with the medical faculties of the colleges. The evidence of Dr. Moffatt, President of the Galway College, was particularly valuable. After expressing his own opinion very forcibly he mentioned that the Rev. Osborne Gordon of Oxford, Mr. Herbert Murray of the Treasury, and Professor Allman, the Professor of Natural History at Edinburgh, were members of a Commission issued in the year 1876 to enquire into the condition and working of the Queen's Colleges and he gave the following extract from their report strongly urging that medical professors of the colleges ought to be entitled to pensions: "In an earlier portion of this report we stated that we saw no reason for increasing the stipends of the legal and medical professors, but that we thought it advisable that a claim to a retiring allowance should be admitted, as in the case of the Scotch Universities, irrespective of the question whether or not the whole time of the professors was given to the public. We are aware of the sound rule which has been established in the Civil Service under which a pension-right only accrues in those cases in which the public have a claim to the whole time of the servant; but we think that the essence of that rule lies in the fact that the public gains by the energies of its servants being centred on their public duties, while a liberal provision is made for retirement on the approach of age or on the failure of the faculties. But in the case of the professors of law and medicine the reverse is the case. The public is the direct loser if their activity is limited to their college life, and professional practice—the larger the better—is actually essential to sound and efficient teaching. It is also an objection to the present system that in Ireland, especially in the west—where the emoluments of a practice are comparatively small and where the salary of a chair is therefore of greater importance—the temptation of a pension in the future might possibly outweigh the immediate advantages of a practice, and that thus the restriction which is nominally imposed in the public interest might induce a professor to impair his efficiency as a teacher by abandoning the practice of his profession. At the same time, one of the main objects for which retiring allowances are granted seems to be overlooked, inasmuch as retirement in consequence of impaired efficiency never is and never will be enforced in the absence of pensions; professors past their work are continued in office and the public in consequence continue to pay full salary for inadequate and inefficient service. On these grounds we are of opinion that the rule which renders engagement in professional practice incompatible with a claim to a retiring allowance should be reconsidered in the case of the Queen's College professors, and that, as is the case in the Scotch universities, they should after reasonable service and under proper conditions be entitled to pension whether engaged in professional practice or not."

Oct. 8th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Funeral of Monsieur Pasteur.

LAST week I gave your readers full particulars of the life and career of the great man who has been removed from our midst; to-day I must say a few words about the national demonstration of sorrow on the occasion of the removal of his remains from the Institute that bears his honoured name to the metropolitan Cathedral of Notre Dame. It may be said that one national funeral in Paris resembles another, but, with the exception of Victor Hugo, no personage in this country who was neither a soldier nor a statesman has been so honoured as was Louis Pasteur on Saturday last. Thousands of citizens of all grades of society visited the Institute to take a last look at the venerated features of him whom they acknowledged to have been the greatest known benefactor of suffering humanity. I will not attempt to describe the progress of the procession, but some idea of the proportions and importance of the cavalcade may be gathered from the fact that the magnificent funeral car, drawn by six horses, was escorted by no less a force than two infantry divisions, two regiments of artillery, and an entire cavalry brigade, under the command of General Saussier, Governor of Paris, and Generals Madelor and de Saint-Julien. At 10.15 A.M. the body was placed in the car, while on the coffin were placed the cocked-hat, coat, and sword of the deceased Academician. Headed by the band of the Garde Républicaine, playing Chopin's funeral march, the immense body of mourners wended their way to the Cathedral, General Saussier and his staff, followed by the First Infantry Division, taking precedence. Among the mourners were representatives of musical and gymnastic societies, syndicates, vast brewing interests, agricultural societies, humane societies, and numerous municipalities, including that of Paris, Dôle (his native place), and Arbois; deputations from the École Normale, École de Physique et de Chimie, École des Beaux-Arts, École Commerciale, &c.; students from Norway, the University of Salamanca, the Collège de l'Arc (Dôle), and from Russia; members of the Association Générale des Étudiants de Paris, in their Tam-o'-Shanters; the *internes des hôpitaux;* deputations from the Academy of Medicine of Medellin (Columbia), the Pasteur Institute of Havana, the Edinburgh University, and the Medical Society of London; and representatives of numerous learned French societies, including several Faculties of Medicine and the Professors of the Alfort Veterinary School. Wreaths of all sizes were carried in profusion, the names visible on them being, amongst others, Laboratoire Municipal, Préfecture de la Seine, Préfecture de Police, Conseil Municipal, &c. The hearse was loaded with floral tributes emanating from the Institut Pasteur ("A son chef"), the Duke of Orleans, the Laboratory of Experimental Pathology of the Paris Faculty, the Berliner Medicinische Gesellschaft ("ihrem grossen Ehrenmitglied Louis Pasteur"), the Experimental Institute of St. Petersburg, the University of Liége, the Pasteur Pavilion of the Cochin Hospital (Paris), the Association of Foreign Students of Paris, Portugal *reconnaissant*, the Toulouse Medical Faculty, the Service de la Diphtérie à l'Hôpital des Enfants Malades (Paris), the Distillers of France, &c. Then followed three immense wreaths, the first of natural flowers, bearing the inscription "A Louis Pasteur—le Roi de Portugal," the second composed of everlastings from the École Polytechnique (accompanied by a delegation of students in uniform), and the third of orchids and foliage, "A Pasteur—le Gouvernement de la République." The pall-bearers were M. Poincaré (Minister of Public Instruction), M. Bertrand (Permanent Secretary of the Academy of Sciences), M. Perrot (Director of the École

Normale), M. Brouardel (Dean of the Paris Faculty of Medicine), M. Boissier (Permanent Secretary of the Académie Française), and M. Bergeron (Permanent Secretary of the Paris Academy of Medicine). The Royal College of Physicians of London were represented by their treasurer, Sir Dyce Duckworth. Then followed the deceased's son and son-in-law and other relatives, Madame Pasteur having proceeded directly to the Cathedral. After the family walked Commandant Bourgois, representing the President of the Republic (who awaited in person the arrival of the procession at Notre Dame), the President of the Council, the Foreign Minister, the Minister of the Interior, the Minister of War and of Marine—in fact, all the Ministers excepting one absent from Paris. The Corps Diplomatique, the two Houses of Parliament, the Legion of Honour, the Institut de France, officers of all arms, the Conseil d'Etat, Cour de Cassation, Cour d'Appel, clergy of all recognised denominations, &c., all were represented. Twelve mourning coaches and about a hundred private carriages followed, the enormous procession being closed by the Second Infantry Division, the cavalry, the artillery, a half-squadron of the Mounted Republican Guard, and a platoon of police. The entire distance covered by the procession was lined by troops, and the attitude of the immense crowds looking on was respectful in the extreme, every man uncovering and many women making the sign of the cross as the hearse passed. The *catafalque* upon which the remains were placed in the choir of Notre Dame was the same as was used at the funeral of the murdered President Carnot. The President of the Republic was seated in the prechoir, the officiating clergy being the Cardinal-Archbishop of Paris, the Archbishop of Sens, and the Archpriest of Notre Dame. Behind the President were the Grand Duke Constantine, Prince Nicholas of Greece, the Ministers, &c. The mass over, the coffin was transported to a *catafalque* erected in the square in front of the church and facing the Hôtel Dieu. Here, in the presence of the President and the family, M. Poincaré delivered a speech reviewing the scientific career of the illustrious dead. The following extracts from the Minister's admirable discourse merit transcription:—

"Les phrases les plus émues ne sont qu'un éloge bien médiocre devant la pieuse douleur que cette perte irréparable a provoquée dans la France entière et qui a rassemblé aujourd'hui, sur le passage de ce funèbre cortège, vieillesse et enfance, richesse et pauvreté, bonheur et infortune, toute une humanité respectueuse, unie dans l'égalité du regret. La science ne se lassera point, messieurs, d'admirer dans le génie de Pasteur la force combinée d'une imagination créatrice et de la plus rigoureuse méthode expérimentale. Il a des inspirations subites qui le portent vers des découvertes inattendues; il a des instincts divinatoires qui le poussent dans des routes inexplorées; il a de ces fougues de pensée qui devancent la constatation des vérités, la préparent, la font plus rapide et plus sûre. Mais, lorsque s'est posé devant lui, dans une de ces illuminations géniales, un problème scientifique, il ne le tient pour résolu qu'après avoir questionné la nature, après avoir groupé ou éliminé les faits, après les avoir définitivement condamnés à répondre. Il se garde de faire peser sur la sincérité de ses observations le poids d'aucun préjugé philosophique. 'La méthode expérimentale,' proclamait-il dans son discours de réception à l'Académie, 'doit être dégagée de toute spéculation métaphysique,' et, après avoir revendiqué pour sa conscience le droit d'affirmer hautement ses convictions spiritualistes et religieuses, il réclamait, non moins énergiquement, pour la science toutes les prérogatives de la liberté. Et c'est effectivement la libre curiosité de son esprit chercheur, aiguillonnée par cette puissance inventrice et secondée par cette scrupuleuse recherche des réalités objectives, qui l'a guidé dans la longue et brillante évolution de ses travaux scientifiques.

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"C'était la reconnaissance du peuple, des pauvres, des humbles, qui montait déjà vers Pasteur vivant, telle qu'elle s'incline aujourd'hui, émue et attendrie, devant ses dépouilles mortelles, telle qu'elle survivra, éternelle et immuable, à travers les générations futures. 'Heureux,' disait Pasteur, 'heureux celui qui porte en lui un idéal et qui lui obéit.' Il a obéi toute sa vie à l'idéal le plus pur, à un idéal supérieur de science, de vertu, de charité. Toutes ses pensées et toutes ses actions se sont éclairées au reflet de cette lumière intérieure: il a été grand par le sentiment comme il a été grand par l'intelligence, et l'avenir le rangera dans la radieuse lignée des apôtres du bien et de la vérité. Adieu, cher et illustre maître! La science, que vous avez si grandement servie, la science immortelle et souveraine, par vous devenue plus souveraine encore, transmettra aux âges les plus lointains l'ineffaçable empreinte de votre génie. La France, que vous avez tant aimée, gardera fièrement comme un bien national, comme une consolation, comme une espérance, votre souvenir vénéré. L'humanité, que vous avez secourue, environnera votre gloire d'un culte unanime et impérissable, où elle verra se fondre toutes les rivalités, et où elle conservera, vivante et forte, la foi commune dans le progrès infini."

The troops defile before the *catafalque*, which the men salute, the President takes his departure, and then the coffin is carried under the porch of Notre Dame, where it is awaited by the Archpriest and clergy. Thus was brought to a conclusion a ceremony which will live long in the memory of all who were privileged to be present. Its imposing character is a proof that the public is not unmindful of the efforts patiently made in laboratories to combat disease; and it is an encouraging sign of the times that the remains of one who, by the creation of his method, has not only achieved great sanitary triumphs, but has paved the way for further and almost undreamed-of successes, should be conducted to his resting-place with honours hitherto reserved for great soldiers or statesmen.

Oct. 8th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Congress of Internal Medicine.

THIS Italian counterpart to the British Medical Association, which was to have met here from the 14th to the 16th inst., has had to make an alteration in its programme and will not meet till the 22nd inst. No harm will be done by this postponement of a week. On the contrary, the President, his Excellency Dr. Guido Baccelli, will be in better condition for the duties than he would have been on the days originally appointed. He has been ill from the effects of over-work and, though now convalescent, will gain much by another six or seven days of much-needed repose. No other alteration will take place in the programme, the main features of which, as already stated, will be the report on Serotherapy, introduced by Professors Foà and Marigliano, and that on Decline (*rallentamento*) in Nutrition, introduced by Professors De Renzi and Reale. This Congress will differentiate itself from its predecessors by a modification on previous programmes. The "Congressisti" will, for the first time, be invited to hear in the great hospital of the Santo Spirito three clinical lectures from three of the most eminent teachers and consultants in the Italian schools—to wit, Professor Achille De Giovanni of the University of Padua, where he holds the chair of Clinical Medicine; Professor Pietro Grocco, who fills the corresponding post in the Istituto di Studi Superiori of Florence; and Dr. Alberto Riva, Professor of Clinical Medicine in the University of Parma. These highly accomplished and experienced physicians have consented with alacrity to initiate this novel feature in Italian Congresses of Internal Medicine and will have the gratification of finding themselves once more face to face with many old pupils or with colleagues from other provinces of Italy by whom they have been called in consultation.

Singular Case of Homicidal Mania.

The fiendish performances of "Jack the Ripper" have had their analogue in Italy, which country need be under no apprehension of losing its prominence in *reati di sangue*. As that murderer chose unfortunate women for his victims, so his Italian prototype selected little children as the objects of his lethal propensity. His *modus operandi* was strangulation, and, having perpetrated the deed, he buried the corpses secretly. For a considerable time he pursued his *métier* with impunity, until he had thus disposed of five "bambini" at least. Arrested and put upon his trial, he was condemned to twenty years of *casa di forze* (close confinement with hard labour), but, having just "served his time" (always in Italy considerably short of the nominal term), he has announced his intention of returning to the scene of his crimes, his native Incisa, in Piedmont. At this the families of that town and neighbourhood have risen in alarm, the mothers being especially vociferous in their protest. To prevent disturbances the local authorities have taken precautions, and a strong police force is already on the spot. But what surprised the medical world is the ill-judged action of the civil magistrates in allowing this murderer to be at large. A more typical case of homicidal mania, confirmed by every anthropometric and psychological test, has seldom come before the profession, and his having been confined in an ordinary prison and not in one specially appointed for criminal lunatics is cited as another illustration of that perverse adhesion to juridical prejudice which evokes such indignant remonstrances from Professor Lombroso and his school. According to a medical correspondent the man's head is of the most misshapen, cretinoid formation, while his whole symptomatology, during trial and in confinement, relegated him to the class called "degenerati" in Italian criminal anthropology. The popular excitement, this time at least, is too openly and passionately on the side of medico-psychology

to pass unnoticed by the authorities, civil and legal; and as I write provisions are on foot to prevent the man's reinstalling himself, unwatched or uncontrolled, in the neighbourhood he has saddened and sullied by his "slaughter of the innocents."

The Red Cross on the Red Sea.

In supplement to a previous reference to this medico-military enterprise I may add that there has set out for Massowah a new detachment of the Croce Rossa Italiana to reinforce the hospital of fifty beds now serving on the heights of Asmara. Some novel features have been introduced in the transport of this convoy. The small, but active and strong, Abyssinian mules have been turned to effective account, and also the hardy mountaineer population. The whole assortment of therapeutic and surgical appliances, linen, and such like is contained in impermeable sacks, while the materia medica and pharmaceutical gear, the *armamentarium chirurgicum*, and medical "comforts" are packed in small chests. The ambulance is further provided with a light, but strong and steady, operating-table, a tent, eight mountain *barelle* (transport seats), water barrels, &c. The Central Committee has prepared two such supplementary ambulances, aided by a handsome subvention from the Regional Committee of the Red Cross at Turin. One of these is, as I have said, on its way to the Erithrea (Red Sea Colony); the other remains here in reserve. The Sottotenente Medico (medical sub-lieutenant) of the Red Cross, Dr. Spinedi, is in charge of the convoy just started, with an efficient staff of *infermieri* (hospital attendants) under him.

Tourists and the Winter Season.

The Italian winter cities are preparing for the influx of the travelling world, the inhabitants of which are now showing an attention to "nettezza publica" (external tidiness) which they deny themselves until their English-speaking *clientèle* is expected. The great heat is now succeeded by delicious autumnal weather, and those who are fortunate enough to be now in Rome are revelling in the "Ottobrate" (October outings) so dear to native and foreigner alike and so brilliantly described in Cardinal Wiseman's "Fabiola." Rumour is busy with the names of distinguished visitors from the British Isles and has already made free with the plans of Her Most Gracious Majesty Queen Victoria. Naples, it says, is the probable scene of Her Majesty's vernal *villeggiatura*, and the public are gravely assured that the Queen will not be deterred from the Neapolitan Riviera by any fear of an eruption of Mount Vesuvius! The report, I need hardly say, is more than premature and seems to be little else than a revival of a similar one for which there was much more to be said just two years ago. Then there was no doubt that King Humbert had placed at Her Majesty's disposal the Palazza Reale at Capo di Monte, a magnificent mansion commanding an extensive view of Naples and surrounded by a park three miles in circumference, artistically laid out with delightful drives. The plan was that the Queen would first proceed to the Villa Fabricotti, near Florence, and after a sojourn there go by sea to Naples. This latter detail of her journey was *motivé* by the necessity of her avoiding Rome, where the difficulty felt by all Royal "arrivals" as to whether the Court of the Vatican or that of the Quirinal should receive their first visit is peculiarly real in Her Majesty's case — Leo XIII. being a personal friend of fifty years' standing, while Humbert I., though undoubtedly King of United Italy, is not acknowledged as such by His Holiness. No finer residence in Italy could be found for Her Majesty than Capo di Monte, its site between mountain and sea giving it a twofold advantage as to air, while in the first weeks of April, the time usually fixed for the Queen's sojourn, the easterly winds are followed by milder breezes, combining invigorating freshness with the warmth of a sub-tropical spring. But, as I have said, nothing is officially known as to Her Majesty's visiting Naples, any more than as to her coming to Florence, where the choice of a villa and the necessary preliminaries to a Royal sojourn are generally known months before they are put in requisition. In the case of Mr. Gladstone—another personage with whose winter movements report is busy—I believe the Riviera and Italy divide the preference of his advisers, it being still a question whether Cannes or Biarritz should come before Florence or Naples, or *vice versâ*. Next month, I understand, the final decision will be taken.

Oct. 6th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Municipal Elections.

THE strong anti-Jewish party in Vienna is jubilant in consequence of the elections having raised its leader, the famous Dr. Lueger, to the dignity of Mayor. The turmoil which has agitated a large part of the population of Vienna for the last two months has resulted in forty-six Liberals and ninety-two Antisemites being returned; there was no struggle for principles, but only for personal interests. Among those who have not been re-elected is that excellent hygienist, Professor Max Gruber, who was the representative of the Ninth District, the Vienna Quartier Latin. His opinion is that medicine ought to have no politics, and he therefore would not join either party. The municipality loses in him one of its best members and an authority on all questions of hygiene. Being a member of the Council of Hygiene his opinion on matters of public health is valued everywhere. Two physicians have been elected, Dr. Krenn and Dr. Rader, both of whom are uncompromising Antisemites; they will not, however, make up for the absence of Professor Gruber.

Charge against the Managers of a Hospital.

In Austria-Hungary there are a few hospitals under the care of the Brethren of Mercy (Barmherzige Brüder) which are conducted in an excellent manner, and in the Vienna hospital of this order the friars, who are duly qualified physicians, fulfil their difficult duties without deriving any personal advantage therefrom. The friars who conduct the hospital in Agram (Croatia) have, however, now been charged with neglect of cleanliness and with such parsimony that the patients do not receive a sufficiency of bread and meat. The linen is changed but twice a month, the mattresses, palliasses, and quilts are torn, and the kitchen utensils are in a bad condition, the glaze of the pans and the tinning of the copper vessels being worn off. There is so much overcrowding that the beds are placed in contact with each other and the patients cannot leave their beds without stepping across their neighbours'; some even lie on the floor or in the corridors. The nurses receive very low wages (12*s.* a month) and are thoroughly incompetent. The drinking-water is taken from the pipes in the waterclosets, and the hospital by no means satisfies modern requirements, the rooms being low, narrow, ill-lighted, and badly ventilated. Even the medicines are impure, and the patients' mixtures sometimes either consist only of water or else contain but a trifling quantity of the essential ingredient. This charge has not failed to cause a great sensation among the profession. It remains to be seen if it can be substantiated.

The Production of Antitoxin in Austria.

Up to July 1st camphorated serum has been supplied free of cost, its quantity amounting to 2130 bottles, containing 29,200 c.c. Since that time the gratis supply has been discontinued, and the price of a dose has been fixed at 2*s.* 5*d.*, each dose possessing a definite and experimentally ascertained curative power (100 units at least). The establishment is now capable of producing 1000 doses monthly. A dose of from 10 to 15 c.c. is sufficient in slight cases, but severe ones require a repetition of the treatment. The establishment directs the injection of the entire contents of a bottle, but when the serum is employed as a prophylactic from 3 c.c. to 3 c.c. are sufficient. The injection may be made on the anterior or inferior thoracic and abdominal regions or on the legs. The serum must not be exposed to light or heat.

Replantation and Transplantation of Teeth.

An interesting paper on this subject was read by Dr. Benedikt at a meeting of the Army Medical Staff at Budapest. He said that Ambrose Paré was the first who performed replantation of teeth, and was followed by Dupont and Pomaret, the latter of whom recorded a case where a tooth which had been extracted by mistake was replaced and eventually adhered. Weld has performed eighty replantations, among which two have failed, and he also proved by experiments on dogs that absolute integrity of the periosteum is one of the most important conditions of a permanent adhesion of the tooth. By replantation Dr. Benedikt means an operation by which a tooth is inserted into living tissue, with which it must enter into nutritive communication. He distinguishes between replantation and transplantation, the latter consisting in the transference of a

tooth from one person to another. In his experiments he appeals to Professor Scheff, who extracted teeth of dogs under anæsthetics and with antiseptic precautions, the teeth being placed in a solution of sublimate. The wound was then disinfected, the bleeding was arrested, the coagulum was removed from the alveolus, and the tooth which was to be replanted was pressed into the cavity. After two days a reddish border was to be seen, and the tooth could be moved backwards and forwards, but after two weeks it was securely fixed. According to Dr. Benedikt the indications for the above operation are loosening of the teeth, caries, and inflammation of the periosteum surrounding the root. A tooth which has been removed from its socket by mistake on the part of the dentist or by violence should be replanted. In the case of toothache from caries where it is impossible to apply any remedy to the painful place the tooth may be extracted, filled with stopping after removal, and then replaced. Dr. Benedikt proposes that the tooth should be carefully extracted, avoiding injury to the socket or the surrounding gum, for a fracture of the alveolus would render subsequent union impossible. The root is then to be trimmed as far as it is rough and eroded, and the tooth is to be replaced after the removal of the pulp and the disinfection of both tooth and alveolus with sublimate. The operation is followed by no great pain and by only a trifling inflammation of the gums.

A Plea for Venesection.

Venesection is not in favour in Austria. Practitioners of the modern school have never seen it performed during their student years, and there are only a few old surgeons who regard it as a powerful means of combating all feverish processes. It must, therefore, appear strange that one of the most eminent Austrian physicians, Professor Jaksch, advocated the use of venesection at a meeting of the Medical Society of Prague, pointing out that its great therapeutical value consists in the immediate decrease of the blood pressure and in the diminution of the number of substances which carry oxygen. It may be employed in pneumonia, but only as a last resource, when the system is overcharged with carbonic acid. From 200 c.c. to 300 c.c. of blood may be withdrawn, and then a sterilised solution of common salt such as is used in physiological experiments is to be injected subcutaneously. The success of this treatment is manifested by the disappearance of cyanosis. Phlebotomy may also be resorted to in uræmia, provided that the patient's blood is normal as regards red corpuscles. Cupping may be employed to relieve the symptoms of carbonic acid poisoning and the pain of pneumonia, being less injurious than narcotics. It will sometimes calm the severe pain of pleurisy, and has also been known to effect improvement in cases of cyanosis and dyspnœa caused by emphysema and heart disease.

Cholera in Galicia.

During the week between Sept. 24th and 30th 18 cases of cholera and 12 deaths have been reported, making a total of 94 cases with 57 deaths (60·6 per cent.) since the commencement of the outbreak.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Cholera among the Hawaiians.

THE present epidemic of cholera in the Sandwich Islands is traced to a vessel from Kobe, Japan. Five hundred and thirty-eight Chinese were landed on Quarantine Islet on Aug. 9th from the steamer *Belgic*. They were from Hong-Kong, but the vessel had taken freight at Kobe and Yokohama, the former being a place where much cholera existed. Three deaths occurred on the passage, the alleged causes being pneumonia and heart disease. After landing there were 4 cases resembling cholera, and 3 were fatal. Thorough disinfection and isolation were used, and, no more cases occurring, in due time the 535 Chinese were transported to their destination on country plantations. Meantime, the disease had appeared in aggravated form on shore. It has now been gradually increasing for more than two weeks, but solely among natives. It is stated that the probable reason is that, while others have been protected by the thorough disinfecting and general sanitation employed, the natives have, perhaps in every case, been infected by eating raw fish, crabs, or seamoss from the harbour and shoals adjacent — food which other people dislike, but which Hawaiians crave for. In several cases the victims were known shortly before being attacked to have eaten heartily of raw fish. The first cases on shore appeared after a native feast where the above-named foods were supplied. It is quite probable that the crabs had penetrated graves of Chinese cholera victims in quarantine who has been buried in the shallow sands, and had afterwards crossed a half-mile of shoal water and been captured by fishing women and eaten raw. It is evident that the disease crossed that strait in some way to the nearest land. A majority of the victims are stricken down with great suddenness and live from three to eighteen hours. Seven-eighths of the cases are fatal. Up to Sept. 5th there have been 34 cases and 29 deaths in a population of about 5000 natives and 15,000 of other races within city limits. Why is the fatality of the attacks so extreme? In general, it may be replied, the Hawaiian dies easily. He has weak resisting power against disease; he succumbs where most men would recover. This is characteristic of the race, as abundant missionary and medical experience testifies. It is largely due to lack of mental courage; pain and violent sickness terrify him; he readily becomes hopeless and gives up; his friends and his medicine-man tell him that an evil god has grappled with his vitals; he feels the demon at work within him, and he yields to terror and dies. This is the history of a large proportion of deaths among the Hawaiians. Another reason for the great mortality of this disease is that in most of the cases no proper medical aid is received until too late. The natives will not report a case of cholera until the patient is beyond relief. Since a cholera hospital was opened and patients removed to it an absolute aversion has seized upon them. The majority of the natives have always been afraid to go to the Queen's Hospital, for they wholly distrust the white "doctor," because they have been taught belief in, and fear of, the minor gods and demons, and licensed medicine-men have held classes for instruction in incantations and demon lore. The fees of these medicine-men being at stake the sick have been taught to have nothing to do with the white "doctor." It is a popular belief that the medical men give poison to their patients in the hospital. Many are received into the hospital when it is too late to help them, and some are already dead before they are reached by the medical man.

Serum Treatment of Tuberculosis.

Mr. Paquin, Professor of Bacteriology in the Missouri State University, argues that as the horse is immune against tuberculosis, its blood serum ought to work beneficently in patients suffering from this disease. He has been using injections in fifty cases and thinks he has proved its value. He claims that the blood of the horse can be used direct, as it is naturally immune and needs no artificial immunisation. He injects the serum under the skin.

Enforcement of the American Sabbath.

The recent efforts of the police of New York to enforce the excise laws requiring the closing of liquor saloons on the Sabbath has aroused the opposition of the German population. New York has over 9000 licensed liquor saloons, and although the law requires that they shall not sell any intoxicating liquors on Sunday the police have been very lax in the enforcement of this provision. Under the reform administration the law has been rigidly enforced, followed by a great reduction of crime and an improvement in the public health. The agitation of the question of the justice of that feature of the excise law which closes the "poor man's club" on Sunday, as the advocates of the saloon call these low resorts, comes before a general election, and is, of course, eagerly seized upon by the politicians. The result of a popular vote can scarcely be doubted when the vast German and Irish voting population is considered, whose vote will be cast solidly for what they term "personal liberty." There is, however, a large reserved vote which rarely appears at popular elections, but which may be induced to come out to meet the emergency. The power that moves this conservative vote emanates from the pulpit and the religious press, both of which are entering into the canvass with unusual vigour, determined to preserve the "American Sabbath."

Sept. 28th.

Obituary.

SURGEON-GENERAL SIR THOMAS LONGMORE, KNT., C.B., F.R.C.S. ENG.

IN our last issue we only had time to make a brief announcement of the sudden death of Sir Thomas Longmore, the news of which reached us last week. It is now our task—painful yet full of interest—to lay before our readers the information which we have been able to gather concerning his life and work.

Sir Thomas Longmore was born at Southwark, in London, on Oct. 10th, 1816, so that at the time of his death he was within a few days of completing his seventy-ninth year. He was the eldest son of Mr. Thomas Longmore, a surgeon in the Royal Navy, who on retirement was appointed to the medical charge of Rockingham House, and of Maria, a daughter of Mr. John Elcum. He received his education at the Merchant Taylors' School and at Guy's Hospital, and in 1841 he was duly enrolled as a Member of the Royal College of Surgeons of England. At his hospital he soon made himself felt as an industrious student; he acted there as dresser to Mr. Bransby Cooper, and afterwards assisted him in his private practice and in writing Sir Astley Cooper's life. He also spent considerable time in arranging and cataloguing after the great surgeon's death the collection of specimens made by Sir Astley Cooper before the museum was purchased by the Royal College of Surgeons of England. On Feb. 3rd, 1843, he was gazetted to an assistant surgeoncy in the 19th Regiment of Foot. He joined the depôt at Dover, afterwards moving with it to Jersey and to Ireland. Early in 1845 he proceeded to the headquarters of the regiment in the Ionian Islands, and served with it there, in the West Indies, and in North America until its return to England in 1851. March 3rd, 1854, saw him gazetted as a regimental surgeon. He subsequently served with his regiment in the Light Division of the Eastern Army, and he was on duty from the date of its first taking the field, throughout the Crimean campaign of 1854–55, until the termination of the siege of Sebastopol, without being absent from his post for a single day. He, however, suffered not a little from the effects of frostbite during those never-to-be-forgotten winters, and to the day of his death carried the memory of hardships heroically and patiently borne, the results of which were, moreover, observable in his gait. He was present at the affair of Buljanac on Sept. 19th, at the battles of Alma and Inkerman, the battle of Balaklava, at the famous sortie on Oct. 26th, and at the assaults of the Redan on June 18th and Sept. 8th. For his services he received the medal with three clasps, the Turkish medal, and was made a Knight of the Fourth Class of the Legion of Honour. On the declaration of peace Mr. Longmore returned to England. He then very wisely improved his professional position by passing the examination for the diploma of the Fellowship of the Royal College of Surgeons of England. But he was not long allowed to remain in this country, for on the outbreak of the Sepoy Mutiny he was ordered with a detachment of his regiment to India, and during the years 1857, 1858, and 1859 served with the army in Bengal, at first as a regimental officer, but afterwards as Deputy-Inspector of Hospitals, the promotion to which rank, on Dec. 31st, 1858, was a further reward for his active services in the East. He thus attained administrative rank in less than sixteen years from the day on which he obtained his first commission. In January, 1859, he received the appointment of Sanitary Officer to the British Forces in Bengal, but in the following July, on the reduction of the establishment, he was ordered home and posted as Principal Medical Officer of the camp at Colchester.

During the Crimean War his skill as an operator had attracted considerable attention, and when, in 1860, Sidney Herbert founded the Medical School, for the better instruction of the medical officers of the army, the professorship of Military Surgery was offered to him and accepted on the advice and at the express desire of Dr. Alexander, the then Director-General. Endowed with excellent qualifications for the post, he filled it with much usefulness, dignity, and honour, and continued to hold it for nearly thirty-one years, until the termination of the summer session of 1891, when it became clear to him that he must seek the quiet and repose which age demands. After occupying the chair of Military Surgery for twelve years, on Oct. 19th, 1872, he was promoted to the rank of Inspector-(Surgeon) General, and in the same year he was appointed to be a member of the Committee on Field Hospital Equipment. Fourteen years later, on Oct. 10th, 1876, he was placed on the retired list, with permission to hold his chair of Military Surgery. On eight occasions he was called on to deliver the introductory addresses at the commencements of sessions of the School, and it fell to his lot to inaugurate the first sessions both at Chatham in October, 1860, and at Netley in May, 1863. In October, 1873, he took for his subject that of Hospital Arrangements in the Field, and the most effective means of affording surgical help to wounded soldiers on battlefields in European warfare. On a similar occasion, in April, 1878, he delivered an oration on the Existing State of our Naval, Indian, and Army Medical Services. In October, 1880, he dealt with the Antiseptic Treatment of Wounds in Military Practice in the Field, and at the opening of the winter session of 1886 he chose for the subject of his address Gentleness in Surgical Practice. His position as the acknowledged chief of the military surgeons of this country, at a time when the working of the Army Medical School and the organisation of our Medical Service were being studied by the chief Continental Governments, naturally brought his name frequently into great prominence and added not a few well-earned honours to the laurels which he had already won. Thus, from the date of his election in 1866, onward for many years he was "correspondant étranger" of the Société Impériale de Chirurgie de Paris; in 1877 he was elected "membre associé étranger" of the Société de Chirurgie de Paris; in 1884 he was made a corresponding member of the Academy of Medicine of France; and on March 27th, 1888, he was elected "associé étranger" of that institution. We have already mentioned that in 1857 he was made a Knight

SURGEON-GENERAL SIR T. LONGMORE, KNT., C.B.

of the Legion of Honour; in 1879, by the decree of the President of the Republic, he was promoted to the grade of "officier" of the Legion. On March 13th, 1867, he was nominated a Companion of the Military Division of the Order of the Bath, and on Sept. 16th of the following year was gazetted Honorary Surgeon to Her Majesty. On the death of Inspector-General Charles Whyte he was appointed (Jan. 3rd, 1881) to receive the "distinguished service reward" thereby rendered vacant. He received the honour of knighthood at Osborne in 1886. At the annual assembly of the Order of St. John of Jerusalem in 1874 he read a paper which was the starting-point of the St. John ambulance classes. He was among the earliest of those selected as associates of the Order, and he was a life member of the Ambulance Association, in the workings of which he ever took a lively interest. He was also a Fellow of the Royal Medical and Chirurgical Society and of other learned bodies, and was for many years consulting surgeon to the Southampton Free Eye and Ear Hospital.

Sir Thomas Longmore frequently had the honour of being sent as a representative of the British Government to foreign countries. As early as 1864 he was deputed to attend the Congress at Geneva since known as the "Geneva Convention of 1864." In 1867 he was sent to Paris to take part in the International Conferences of the Societies for Aid to Wounded Soldiers in time of War. In 1869 he was at Berlin, as the British Government delegate, to take part in an International Conference on Aid to Sick and Wounded in War. In 1873 he was sent by the War Secretary to Vienna to report on the field hospital equipment collected at the "Sanitäts-Pavillon" of the World-Exhibition in that city. In 1876, at Brussels, he was president of a committee ordered to report on the appliances for aid to sick and wounded in war exhibited in the Sanitary Exhibition there. At Paris, in 1878, he represented the Government in an International Congress to consider the Medical Arrangements of Armies in the Field. At the International Medical Congress held in London in 1881 he was President of the Section of Military Surgery and Medicine, and in his address gave a sketch of the existing arrangements for ensuring systematic help and skilled attention to the wounded in case of England becoming involved in war (published in the Transactions of the Congress and in THE LANCET of Aug. 6th, 1881). In September, 1884, he again represented the Government at Geneva at the Conference of the Societies for Aid to Sick and Wounded in War; and in the autumn of 1887 he was sent to Carlsruhe to be present at the International Red Cross meeting in that city. In the June of the latter year the annual meeting of the Southern Branch of the British Medical Association was held at Netley, and Sir Thomas Longmore, as the President, delivered the annual address. In 1888 he was invited to act at Antwerp as British representative and member of the international jury for assessing the prizes offered by the Empress Augusta of Germany for the best forms for a movable hut-hospital. His report on the exhibition and the proceedings of the jury are printed in Vol. XXVI. of the Army Medical Reports. In October, 1889, he was sent by the Secretary of State for War to Paris to take part in the fourth session of the French Surgical Congress; he was elected one of the vice-presidents, and subsequently (1890) published a report on the proceedings, with observations on the Military Medical Schools of France. Of these conferences his reports may be found in the Army Medical Department Reports and in the special Transactions of the Congresses. The work which he did so well in the Army Medical School is shadowed forth in his writings. Although not a brilliant or voluble lecturer, he was most painstaking, precise, and conscientious. Those who listened to his discourses during the many years in which he held his chair, carried away with them the impression of the thoroughness with which his lectures were prepared and of the pains and trouble he took to make even the smallest point intelligible to them. When delivering his last address on July 17th, 1891, after announcing his coming retirement in terms of characteristic modesty and expressing that high sense of public duty which marked his whole career, he epitomised the changes and vicissitudes incidental to a growing and developing Service. No man could speak on such a subject with greater authority, for his one aim in life was to be, as far as may be, and not merely to be considered, a perfect soldier-surgeon. Entering the army as a regimental officer, he saw the regimental system abolished, the germ of a new, separate, and independent medical department planted in its stead, and he long and carefully watched its growth and development. We can echo the remark which Dr. R. Farquharson made (speaking of Sir Thomas Longmore's retirement, after distributing the prizes at the termination of the summer session of the Army Medical School, 1891), when addressing the young officers, that "they would know better some day than they did now that the progress of military surgery for the last thirty years was more intimately associated with the name of Longmore than with any other."

The career of Sir Thomas Longmore as a writer commenced about the year 1859, when he published a "Synopsis of Sixteen Cases of Heat Apoplexy" which occurred in Her Majesty's 19th Regiment at Barrackpore; it appeared in THE LANCET of March 26th of that year. He wrote a description of two additional cases in the sixth volume of the "Indian Annals of Medical Science." These papers were followed by a "Report on Gunshot and Sabre Wounds of Invalids sent to Fort Pitt during the years 1860 and 1861," which consisted of thirty pages and which he extracted from the Statistical, Sanitary, and Medical reports of the Army Medical Department; it was issued in the October of 1863. His first important literary work, however, was "The Illustrated Optical Manual," published in 1863, the earlier editions of which were intended exclusively for military practice. This manual reached a fourth edition in 1888, when it was issued as a text-book for civil as well as for military surgeons. Following these efforts there came from his pen these papers and books: "Remarks on the recently proposed American Plan of treating Gunshot Wounds of the Chest by Hermetically Sealing" (THE LANCET, Jan. 2nd, 1864); "A Note on some of the Injuries sustained by the late President of the United States" (President Lincoln) in THE LANCET of June 17th, 1865; a Catalogue of the Museum of Military Surgery at Netley (1867); a paper on "Amputation at the Knee-joint in Military Practice" (*Brit. Med. Jour.*, Jan. 5th, 1867); "A Treatise on the Transport of Sick and Wounded Troops" (1869), which he dedicated to his esteemed colleagues at Netley, to whose affectionate care he was so greatly indebted for recovery from a severe illness, and which was rightly described at the time of publication as "the most careful and thorough work on the transport of sick and wounded troops which has been published in any country"—a second edition of this work was brought out in the year 1893, edited by Surgeon-Captain W. A. Morris; "Remarks on the Instruments designed for Exploring Gunshot Wounds with a view to detect bullets or other foreign bodies suspected to be lodged in them" (*Brit. Med. Jour.*, Dec. 23rd and 30th, 1871); "Ambulances and Ambulance Service" (1875); "The Appliances for Aid to the Sick and Wounded in War, exhibited at Brussels in 1876"; "Instruction on the Examination of Recruits" (1882); "The Sanitary Contrasts of the British and French Armies during the Crimean War," published in 1883, in which he brought to notice the special circumstances which exercised so disastrous an influence on our army in the Crimea, and the measures which were adopted to restore its health; "On Field Dressings for Use in Time of War" (1887); an essay "On Gunshot Injuries" in the successive editions of "Holmes' System of Surgery"—in the third edition (1883) it extended to rather more than 100 pages (this essay had been previously reprinted both in the United and Confederate States, and was officially distributed during the Civil War); "The New Military Weapons and Explosives" (*Brit. Med. Jour.*, March 5th, 1892), being some observations which he forwarded to Geneva in support of a proposal to consider, at the approaching International Congress of Red Cross Societies at Rome, whether any modifications of existing field hospital arrangements were required owing to the general adoption of the new weapons and explosives in armies; and a biographical study of Richard Wiseman, Sergeant-Surgeon to Charles II., published in 1891. His *magnum opus* was entitled "Gunshot Injuries: their History, Characteristic Features, Complications, and General Treatment," the first edition of which he produced in 1877. It is the book which, next to Parkes' "Manual of Hygiene," is best known to the officers of the military medical services. A second edition, necessitated by the changes in the firearms and projectiles of all the leading armies, has just been issued from the press. It consists of nearly 800 pages, and occupied his attention to within a few weeks of his death. Sir Thomas Longmore has in this new edition endeavoured to bring his work up to date; on it he laboured but too well and

too continuously for his own welfare; we know that he spared neither time nor trouble on the endeavour, and we feel sure it will be widely appreciated. We have already briefly stated that Sir Thomas Longmore was a member of several learned societies. As a Fellow of the Royal Medical and Chirurgical Society he was a frequent attendant at the meetings, and read the following papers, which can be found in the Transactions: "Remarks on Two Cases of Kelis" (1863); "On the Classification and Tabulation of Injuries and Surgical Operations in Time of War" (1871); and "Remarks upon Osteo-myelitis consequent on Gunshot Wounds of the Upper and Lower Extremities, and especially upon the treatment of stumps affected with Osteo-myelitis after amputation necessitated by such injuries" (1865). To the Army Medical Department Reports he was also a frequent contributor. Among his papers may be mentioned "Remarks on some of the Prussian Arrangements for the Transport of Wounded in Time of War" (1870); the report of a case of "Transfixion of the Right Side of the Chest and Right Lung by a Lance, with Recovery" (1871); the Reports on Invalids admitted into the Royal Victoria Hospital, Netley, for wounds and injuries received in New Zealand and in Egypt during the campaigns of 1865 and 1882 (Army Medical Department Reports, 1866, 1883); a Description of a preparation of the upper part of a femur after gunshot fracture, sent to Netley for preservation in the Museum (1884); and a "Report on the Competitive Exhibition of Movable Hut-hospitals at Antwerp in September, 1885." In these reports also appeared the introductory address he delivered at Fort Pitt on the opening of the Army Medical School; a Lecture on the relations of the Army Medical Department and its officers to other departments of the army; Notes on the examination of visual fitness of recruits; a Summary of the numbers, classes, and results of the gunshot and sabre wounds inflicted during the Mutiny; Remarks on hand-wheel litters; and a description of the water-colour drawings executed by Sir Charles Bell illustrative of wounds received at Waterloo. Though his writings are thus shown to be almost exclusively confined to military and medical professional subjects, yet in his account of Wiseman he has given us a glimpse of his keen appreciation of the work of the historian and biographer, and allowed the outside world to know something of that inner nature, so well known to his friends, which was devoted to a wider literature.

On Feb. 11th, 1862, he married at East Claydon, Bucks, Mary Rosalie Helen, second daughter of the late Captain W. S. Moorsom, of the 52nd Regiment, by whom he had issue four sons and three daughters. It is not for us here to say much of his private life or of the charm of the home circle, of which he was ever the centre and figurehead: we have been writing of the man as we knew him in his official capacity. As, however, we have been admitted to see something of his home life, and have enjoyed the privilege of spending pleasant hours with him since his retirement, we may, perhaps, be permitted to touch on the singular charm of character and mind which he possessed and which endeared him to all hearts. Many of his younger friends were wont to wend their steps towards his home when in want of human sympathy and of the sound and ripe advice which were ever at their service. Passing from the environment of our age—of rush and callous cynicism—we have felt, when nearing the threshold of "The Paddock," as if we were breathing a purer air and entering an area of calm judgment and repose. Not a few of us have, we think, returned from visiting him braced with a better courage to fight life's battle, and some, when passing down the drive from his home, carried to higher realms of thought, have heard an echo of the late Laureate's lyre—

> "A second voice was at mine ear,
> A little whisper silver-clear,
> A murmur, 'Be of better cheer.'"

In the drawing-room of this home, of which he was the light and life for over twenty-five years, hangs the replica of the portrait the original of which, painted by George Reid of Edinburgh and exhibited at the Royal Academy in 1887, now occupies an honourable position in the ante-room of the officers' mess at Netley. It was presented to the Army Medical Department by Sir Thomas Longmore's comrades of the Military Medical Departments as a testimonial in recognition of his great services. Both the portrait and the replica, which latter was presented to Lady Longmore, are excellent likenesses. He is represented, in undress uniform, in the act of delivering a lecture; the artist has been singularly happy in catching that expression of earnest thoroughness which was usual to him on such occasions. His death was terribly sudden, though to those who knew him well it did not come as a surprise, for during the last few years he had many times suffered from attacks of cardiac weakness associated with faintness and other warning signs. On the morning of Monday, Sept. 30th, he was apparently in his usual health, and at a quarter past seven o'clock said farewell to his son-in-law who had been staying with him; before 8 o'clock he was no more. Though his call came thus suddenly his friends well knew that he was ready, and that, inspired with a holier and sublimer faith than the great Roman orator possessed, he could with a more joyful anticipation exclaim: "O præclarum diem, cum ad illum divinum animarum concilium cœtumque proficisci." From Swanage, Dorset, where, as had been his custom for many years, he had been spending a few weeks, his body, enclosed in a coffin of unpolished oak, was brought to Hamble, the village where he resided during his early Netley days, on the evening of Oct. 2nd, and at three o'clock on the following afternoon it was consigned to a grave on the north side of the churchyard, in the presence of his widow and family and a large gathering of friends. Among the latter were included the present staff of the Army Medical School and the military medical staff of the Royal Victoria Hospital, headed by Sir William Mackinnon, K.C.B., the Director-General. His old friend, the Rev. T. L. O. Davies, Vicar of Woolston, and the Rev. J. J. Curling, Vicar of Hamble, read the impressive service.

Our duty is all but finished; we have endeavoured to tell of the work of Sir Thomas Longmore, of the work of a man who ever trod strictly in the straight path, who did justice, and loved mercy. Of him we may truly say that no man rendered greater services to his Department, nor strove more in his generation to advance its interests, to promote scientific progress, and to raise to a high standard professional military education. In conclusion, we feel we cannot do better than quote the words which Sir William Mackinnon made use of at the meeting of the Senate of the Army Medical School, held in July, 1891, when giving expression to the unanimous feeling of regret felt on Sir Thomas Longmore's retirement from public life; he said that Sir Thomas Longmore "had not only raised the reputation of the Army Medical School as well as the Medical Service of the army generally by his great works on military surgery and ambulance transport and by his many admirable works and reports, but had achieved through the medium of these a reputation throughout Europe and America which reflected infinite credit upon the Service of which he was so bright an ornament."

WILLIAM HENRY BELLOT, M.D. ERLANGEN, L.R.C.P. EDIN., F.R.C.S. ENG.

WE regret to have to record the decease of a venerable and highly respected member of our profession, Dr. Bellot of Leamington, who passed away on Sept. 24th at the advanced age of eighty-four years. He was the son of a Manchester surgeon and became a Licentiate of the Society of Apothecaries in 1833. In the following year the Royal College of Surgeons of England admitted him as a Member and conferred the Fellowship on him in 1852. For many years he practised in Stockport in association with his uncle, Mr. Bellot, and married the daughter of Mr. Killer, an old-established practitioner in the town. In addition to many other public appointments he was staff surgeon to the Cheshire militia and honorary surgeon to the Stockport Infirmary. In 1860 he took the diploma of L.R.C.P. Edin., and graduated as M.D. of the University of Erlangen in 1862. About thirty years ago Dr. Bellot took up his residence in Leamington, where he gave much of his attention to the affairs of the public institutions of the town, and up to the time of his death was on the committee of the Warneford Hospital. He has left a widow and family.

A MEETING of the South-Western Division of the Medico-Psychological Association will be held at Wonford House, Exeter, on Tuesday, Oct. 15th. Dr. Deas will provide light luncheon between 1.30 and 2.30 P.M. Wonford House is fifteen minutes' drive from Queen-street Station, and twenty minutes' from St. David's. Dr. Deas will open a discussion on the Uses and Limitation of Mechanical Restraint as a Means of Treatment; Dr. MacDonald will read a paper on Nursing; and Dr. Morton will read Notes on three cases of Spontaneous Gangrene.

Medical News.

UNIVERSITY OF CAMBRIDGE: EXAMINATION IN SANITARY SCIENCE.—The following candidates have satisfied the examiners in both parts of the examination:—

Robert Frederick Carse, Christopher Childs, Thomas Dunlop, John Galletly, James John Gorham, Charles Robert Mortimer Green, Patrick Gill Griffith, Charles Williams Hayward, Ernest Hill, Kate Marion Hunter, Arthur Jervis, David Clark Muir, George Newman, William James Potts, John Thomson Prangnell, and Malcolm Alexander McIntyre Sinclair.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the Second Examination of the Board in the subjects indicated on Monday, the 7th inst.:—

Anatomy and Physiology.—Alfred Holroyd, Yorkshire College, Leeds; Guy Harle Irvine, Frederick Arthur Coates, Edgar Steele Edwards, and James Williamson Wallace, University College, Bristol; Saville Bentley, Firth College, Sheffield; Arthur Myddleton Dodd and Alfred Johnson, University College, Liverpool; Frank Edward Wayte and William Taylor Jackson, Owens College, Manchester; James Henry Mort, Cambridge University and Owens College, Manchester; Geoffrey Orr Fern Sealy, Grant Medical College, Bombay; Edward Hugh Musgrove, University College of South Wales, Cardiff; Joseph Longheed Baskin, Queen's College, Cork; and Willoughby Arthur Blackstone, University College, London.

Anatomy only.—George Whittenburg White, Firth College, Sheffield; Edgar Ashby, Guy's Hospital; and George Beley, St. Thomas's Hospital.

Physiology only.—William Stanley Boothman, Owens College, Manchester; George Lionel Wright, University College, Bristol; Charles Braginton Salway, St. Thomas's Hospital; Arthur Bradshaw Passmore, Guy's Hospital and Durham University; Edward Thomas McDonnell, Queen's College, Belfast, and Mr. Cooke's School of Anatomy and Physiology; and Martin Clover, University College, London.

Seventeen gentlemen were referred in both subjects, four in Anatomy only, and one in Physiology only.

Tuesday, the 8th inst.:—

Anatomy and Physiology.—Cecil Francis Watson, Harry Stanley Turner, Robert John Pritchard, and Edward Cecil Davies, Guy's Hospital; Francis Lionel Rae, Cambridge University and Guy's Hospital; Henry Herbert Elworthy and Charles Stanley Cato, Westminster Hospital; John Maltby Edwards, Charing-cross Hospital and Mr. Cooke's School of Anatomy and Physiology; Horace Sampson Roch, King's College Hospital; Charles Edward Evans, University College, London; Samuel Hey, Cambridge University and St. Bartholomew's Hospital; William Inglis Bradley, McGill College, Montreal, Canada; George Young, London Hospital and Trinity College, Dublin; Alfred Reginald Key, Isaac Llywelyn Morris, and Francis Graham Richards, St. Bartholomew's Hospital.

Anatomy only.—John Edmund Francis and John William Cheese, University College, London.

Physiology only.—Guy Berners Nicholson, Cambridge University and St. Bartholomew's Hospital; Edwin Fryer, Guy's Hospital and Mr. Cooke's School of Anatomy and Physiology.

Sixteen gentlemen were referred in both subjects, two in Anatomy only, and two in Physiology only.

SOCIETY OF APOTHECARIES OF LONDON.—The following candidates passed in the under-mentioned subjects (September, 1895):—

Surgery.—Butcher, F., Royal Free Hospital; Garrow, A. E., McGill University; Jones, R., St. Mary's Hospital; Preston, C. C., Manchester; Renshaw, C. A. K., Cambridge and Manchester.

Medicine, Forensic Medicine, and Midwifery.—Breton, L. M., St. Thomas's Hospital; Butcher, F., Royal Free Hospital; Cryer, J., Manchester; Garrow, A. E., McGill University; Old, J. E. S., London Hospital; von Humpe, E. T. V., Royal Free Hospital.

Medicine and Forensic Medicine.—Abbott, T. B., Leeds; Downes, G., Dublin.

Medicine.—Sims, E. R., Leeds and Glasgow.

Forensic Medicine.—Grace, A. H., Bristol; Hilton, A., Manchester; Holst, M. K. S., Royal Free Hospital; Young, T. W. H., Toronto.

Midwifery.—Goulden, R., Manchester; Wallis, P. R., University College.

To Messrs. Abbott, Breton, Butcher, Cryer, Downes, Garrow, Old, and Sims was granted the diploma of the Society entitling them to practise medicine, surgery, and midwifery.

Primary Examination. Part II.

Anatomy and Physiology.—J. W. Cheese, University College; L. D. B. Cogan, Guy's Hospital; G. S. Foulds, Manchester and Edinburgh; E. Fryer, Guy's Hospital; C. E. Hogan, St. Bartholomew's Hospital; D. V. Lowndes, London Hospital; B. S. O. Maunsell, St. Bartholomew's Hospital; H. R. Miller, Guy's Hospital; and C. R. White, Edinburgh.

Anatomy.—S. R. Bhagtani, King's College Hospital; H. Charles, Middlesex Hospital; J. C. S. Dunn, St. Bartholomew's Hospital; G. W. Dutton, Middlesex Hospital; J. Ellul, Edinburgh; B. Hogan, London Hospital; A. R. Hoare, St. Thomas's Hospital; R. O. Jones, Guy's Hospital; E. F. Lamport, Royal Free Hospital; and H. W. B. Walling, Guy's Hospital.

Physiology.—F. G. Aldrich, Charing-cross Hospital; H. J. de Saram, Middlesex Hospital; A. H. FitzGibbon, St. Bartholomew's Hospital; W. M. Hocken, Liverpool and Edinburgh; H. G. Lewer, Edinburgh; E. P. Marett, St. Thomas's Hospital; W. P. R. Newth, St. Thomas's Hospital; and J. Scarr, Manchester.

Biology.—E. Yoxall, Birmingham.

Chemistry.—R. Brookes, Westminster Hospital; C. H. Thomas, London Hospital; and A. H. Wilson, Birmingham.

Materia Medica and Pharmacy.—F. E. T. Evans, Royal Free Hospital and E. C. Scarlett, Royal Free Hospital.

Materia Medica.—H. Greenwood, London Hospital.

THE LONDON HOSPITAL MEDICAL SCHOOL.—The Price Scholarship in Science, value £120, has been gained by Mr. H. Balean; Science Scholarships of £60 and £35 respectively by Mr. O. Eichholz and Mr. A. B. Soltau. Price Scholarship in Anatomy and Physiology for university students has been awarded to Mr. R. C. Wall and Mr. J. H. Evans jointly.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—The annual meeting of this society was held at the Miller Hospital, Greenwich, on Oct. 4th, when the following officers were appointed for the ensuing year:—President: Ernest Clarke, M.D., B.S. Lond., F.R.C.S. Vice-Presidents: Peter Cooper, M.R.C.S., L.R.C.P.; and Frank Tayler, B.A., M.B. Lond. Council: A. Stewart Brown, F.R.C.S. Edin.; Morgan Dockrell, M.A., B.Ch., M.D. Dub.; George Herschell, M.D. Lond.; Arbuthnot Lane, M.S. Lond., F.R.C.S.; Clarke Morris, M.R.C.S.; C. J. Parke, M.R.C.S.; and Septimus Sunderland, M.D. Brux. Treasurer: Prior Purvis, M.D. Lond. Secretary: E. H. Ezard, M.D., C.M., D.Sc. Edin. Librarian: J. P. Henry, B.A., M.D., B.Ch. Dub. The Purvis Oration was delivered by Professor Curnow, M.D., who chose for his subject, Medical Examinations and Medical Education.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Thursday, Oct. 3rd, the President (Dr. Uthoff) in the chair. Messrs. John Bradbury Winter and John Francis Atkins were elected members of the society. Dr. A. J. Richardson showed a child from the Sussex County Hospital suffering from infantile palsy in both legs with double talipes equino-varus. Dr. Richardson also showed photographs of a case of Sciopody in a girl aged ten, who was under his care. Mr. Sanderson showed a patient for whom nine months ago he had removed the breast for scirrhus, as well as the lymphatics of the axilla and of the posterior triangle, and he strongly recommended this extension of the operation in all cases. Dr. Uthoff gave an account of a very rapid case of diabetes in a girl aged seventeen, who passed quickly into diabetic coma, fatal in six hours. Dr. Maynard read notes of an unusual case of intestinal obstruction in which dilatation of the stomach had existed for a long time. Colotomy had been followed by complete relief from all the symptoms of dilatation.

THE CHURCH SOCIETY FOR THE PROMOTION OF KINDNESS TO ANIMALS AND THE CHURCH SANITARY ASSOCIATION.—At the annual meetings of the Church Society for the Promotion of Kindness to Animals and the Church Sanitary Association, which were held jointly in the Church House, Westminster, under the presidency of the Dean of Rochester, Dr. Sykes, medical officer of health for St. Pancras, read a paper on Public Slaughter-houses and the Proper Inspection of Meat. In the course of the proceedings it was mentioned that the societies had memorialised the London County Council, the Board of Agriculture, and the Local Government Board for amended legislation in respect of public slaughter-houses. Dr. Norman Kerr said that their object was to carry to every parsonage in the land the conviction that it was the duty of the clergy to make use of the Church's machinery in every parish to secure improved sanitation and the greatest possible immunity from infectious disease. The Rev. Septimus Buss, Vicar of Shoreditch, remarked that the question of the clergy dealing with the public health had been a matter of discussion. The opinion of the Church Sanitary Association was that, while it was the first duty of the clergy to press upon the people the acceptance of the Gospel, it was right that they should also deal with those things which concern the welfare of the body. The Dean of Rochester, in the course of a long address, described a visit which he had recently made to an establishment in Chicago, the largest of its kind in existence, where 8000 pigs and 3000 cattle were slaughtered daily. Everything was done as humanely as possible, and he did not believe that any more pain was inflicted than was absolutely necessary. In his concluding remarks Dean Hole strongly advocated the adoption of smoke-consuming furnaces, and complained that Rochester, which twenty years ago was one of the prettiest cities in the kingdom, now suffered very much from the unwholesome and offensive emanations of the cement factories.

BRISTOL UNIVERSITY COLLEGE.—The winter session commenced on Oct. 2nd, when the opening address was delivered by Sir C. M. Kennedy, K.C.M.G., C.B., late of the Foreign Office and Vice-President of the Society of Arts of London. Sir C. Kennedy has joined the staff of the College as lecturer upon international law, and his address was entitled "Diplomacy and International Law."

FOOTBALL CASUALTIES.—On Saturday last one of the backs in the Grantham Rovers' team, while playing a match at Grantham between the Grantham Rovers and Wellingborough teams, fractured his right leg below the knee, and was conveyed to the hospital. On the same day a young man, during a game at Farnworth, sustained injuries to the abdomen, from which he died on Tuesday last.

MRS. SAXTON, of the Elms, Shrewsbury, has given a sum of money to the Salop Infirmary from the funds of the Gwyn Trust. The interest of this money is to be devoted to the maintenance in perpetuity of two beds in the children's ward, over each of which an inscription will be placed stating the endowment to have been furnished by Mrs. Saxton in memory of her parents.

THE SIXTH INTERNATIONAL CONGRESS OF OTOLOGY.—The Sixth International Congress of Otology will meet in 1899, as already stated, in London, and its organising committee is thus constituted: Dr. C. A. Ballance, Dr. A. E. Cumberbatch, Sir W. Dalby, Mr. G. P. Field, Dr. J. Dundas Grant, Mr. T. Mark Hovell, Dr. U. Pritchard (President), Dr. W. Laidlaw Purves, and Dr. St. Clair Thomson, all of London; Mr. Cresswell Baber, Brighton; Dr. T. Barr, Glasgow; Dr. A. Bronner, Bradford; Dr. J. W. Browne, Belfast; Dr. C. E. Fitzgerald, Dublin; Dr. P. McBride, Edinburgh; Dr. F. M. Pierce, Manchester; and Mr. G. Stone, Liverpool.

THE GUILD OF ST. LUKE, EVANGELIST AND PHYSICIAN.—The thirty-first anniversary of this Guild will be celebrated next week. On the Feast of St. Luke Evensong will be sung at St. Paul's Cathedral, when the Bishop of St. Andrews will be the preacher. The music will be rendered by the London Gregorian Choral Association, and the offerings will be for the expenses of the services and the Medical Missionary Fund. On the following day there will be a corporate Communion of the Guild at the Church of St. Thomas, Regent-street, at 8 A.M., and there will be celebrations for the intention of the Guild in some 600 churches throughout England and Wales, Scotland, and America. On Saturday, Oct. 19th, the annual general chapter will be held at the Holborn Restaurant at 6 P.M., when the report of the council will be presented, the Provost's address delivered, and the officers elected for the ensuing year.

DIPHTHERIA IN LONDON.—Last week diphtheria in London was not quite so fatal in form as in the week preceding, so far as London proper was concerned at all events; but it is now exhibiting a phase which is by no means of a satisfactory character, inasmuch as the disease is assuming a fatal tendency in the suburbs above its recent records. In the West Ham registration district it has for a long time shown a disposition to remain epidemic, and during last week it was widespread in East and West Ham, not being confined to Plaistow, as has been its wont for the most part. The deaths in the whole district last week numbered 10; and in addition to these there were 4 registered in the northern union of Edmonton, some of them in the suburb of Hornsey, and others as far out as Cheshunt; while on the west the suburban locality of Willesden was fatally invaded, 4 deaths being recorded there in the week. In all there were 31 registered deaths from the disease in the outer ring of the metropolis, only 13 short of the number for the whole county of London. The 44 registered deaths in the county were a fall from 56, and only 2 in excess of the corrected decennial average for the corresponding week of the years 1885-94. They all occurred in young persons under the age of twenty years, and 5 belonged to St. Pancras, 4 to Hackney, and 3 each to Kensington, Bethnal-green, Limehouse, Poplar, and Greenwich sanitary areas. The admitted cases to hospital were 90 in number, a smaller total than in many weeks past, former recent totals being 105, 114, and 114. The patients remaining in hospital—namely, 672—were much the same as for some weeks successively, but the attacks show no such diminution as the admissions and deaths seemed to warrant last week.

SOCIETY OF ANÆSTHETISTS.—The third annual meeting of this society will be held at Limmer's Hotel, Conduit-street, W., on Thursday next, Oct. 17th, at 7 P.M., to receive the reports of the council and treasurer and to elect the officers and council for the ensuing year.

ROYAL BRITISH NURSES' ASSOCIATION.—A donation of £100 has been made by an anonymous donor to the funds of this association. We are asked to state that the gift is most gratefully acknowledged by the treasurer on behalf of Her Royal Highness the President and the Executive Committee.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.—*University Scholarships:* R. R. Wade, B.A., Exeter College, Oxford, £52 10*s.*; G. S. Keeling, B.A., Caius College, Cambridge, £52 10*s.* *Natural Science Scholarships:* W. H. Willcox, £105; H. Lovell-Keays, £52 10*s.*; E. W. Holyoak, £52 10*s.*; A. F. Hayden, £52 10*s.*

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BIRD, F. D., M.B., Ch.M. Melb., M.R.C.S. Eng., has been appointed Medical Officer to the Melbourne Hospital, Victoria, Australia.

BOWE, ARTHUR, L.R.C.P., L.M. Edin., M.R.C.S. Eng., has been reappointed Health Officer for the Shire of Ararat, Victoria, Australia.

BOYD, W. R., M.B., Ch.B. Melb., M.R.C.S. Eng., has been appointed Physician to Out-patients, the Melbourne Hospital, Victoria, Australia.

CANE, LEONARD, M.D. Lond., B.S., has been appointed Physician to Peterborough Infirmary, vice Paley, deceased.

COLLIER, THOS., M.R.C.S., L.M., has been reappointed Medical Officer of Health for the Ripon Rural Sanitary District.

DAISH, W. C., M.D. Melb., Ch.B., has been appointed Physician to Out-patients, the Melbourne Hospital, Victoria, Australia.

DONOVAN, P. H., M.B., B.S. Irel., has been appointed Health Officer for the Rosedale Shire, Rosedale and Denison Ridings, Victoria, Australia, vice Cookson, resigned,

ELLIS, W. C., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Tollerton Sanitary District of the Easingwold Union.

FITZGERALD, T. N., L.R.C.S. Irel., has been appointed Medical Officer to the Melbourne Hospital, Victoria, Australia.

GARLAND, E. C., L.R.C.P. Edin., M.R.C.S., has been reappointed Medical Officer of Health for the Borough of Yeovil.

HAMILTON, A. J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Health Officer for the Shire of Mansfield, Victoria, Australia, vice Reynolds, resigned.

HILL, CHARLES ALEX., M.B., B.A., B.A. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Obstetric Assistant at St. George's Hospital.

HOWARD, G. J., M.D., Ch.B. Melb., has been appointed Physician to Out-patients, the Melbourne Hospital, Victoria, Australia.

HOWARD-JONES, J., D.Sc. Pub. Health, M.B., C.M. Edin., has been appointed Medical Officer of Health, Medical Officer to the Port Sanitary Authority, &c., for Newport (Mon.).

KNIGHT, HENRY, M.R.C.S., L.R.C.P., has been appointed House Surgeon at the West London Hospital.

LANGLANDS, F. H., M.B., Ch.B. Melb., F.R.C.S. Eng., has been appointed Surgeon to Out-patients, the Melbourne Hospital, Victoria, Australia.

LAWRENCE, H. F., L.R.C.P., L.R.C.S., M.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Physician to Out-patients, the Melbourne Hospital, Victoria, Australia.

MACINERNEY, J. R., M.D. Durh., L.K.Q.C.P., L.R.C.S. Irel., has been appointed Physician to the Melbourne Hospital, Victoria, Australia.

MERSON, A. G., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for Aberdour and District.

MILNER, CYRIL W., M.R.C.S., L.R.C.P., has been appointed Assistant Resident Medical Officer to the Nottingham General Dispensary.

MOLONEY, P., M.B. Melb., has been appointed Physician to the Melbourne Hospital, Victoria, Australia.

MOORE, WM., M.D., Ch.M. Melb., has been appointed Surgeon to Out-patients, the Melbourne Hospital, Victoria, Australia.

NIHILL, J. E., M.D. Durh., M.R.C.S. Eng., has been appointed Physician to Out-patients, the Melbourne Hospital, Victoria, Australia.

NOYES, A. W. F., M.R.C.S. Eng., has been appointed Surgeon to Out-patients, the Melbourne Hospital, Victoria, Australia.

PAYNE, G. S., M.R.C.S., has been appointed Medical Officer of Health for Thorney.

RENNIE, G. C., M.B., Ch.M. Melb., has been appointed Surgeon to Out-patients, the Melbourne Hospital, Victoria, Australia.

ROBERTSON, J. A., M.D., C.M. Glasg., has been reappointed Medical Officer for the Stilton Sanitary District of the Peterborough Union.

RYAN, C. S., M.B., Ch.M. Edin., has been appointed Medical Officer to the Melbourne Hospital, Victoria, Australia.

SPRINGTHORPE, J. W., M.D., Ch.B. Melb., M.R.C.P. Lond., has been appointed Physician to the Melbourne Hospital, Victoria, Australia.

STANLEY, H., M.B., B.S. Camb., has been appointed Medical Officer for the Sellindge Sanitary District of the Elham Union.

STEELE, W. C., M.B., C.M. Glasg., has been appointed Medical Officer for the Seventh Sanitary District of the Tendring Union, vice Potter, resigned.

STEPHENS, WILLIAM J., M.R.C.S., L.R.C.P., has been appointed Senior Resident Medical Officer to the Nottingham General Dispensary, vice H. E. Belcher, resigned.

STIRLING, R. A., M.B., Ch.B. Melb., L.R.C.P., L.M., L.R.C.S. Edin., has been appointed Medical Officer to the Melbourne Hospital, Victoria, Australia.

SYKES, Dr. J. F. J., Medical Officer of Health, St. Pancras, has been appointed Lecturer on Public Health at Guy's Hospital Medical School.

SYME, G. A., M.B., Ch.M. Melb., F.R.C.S. Eng., has been appointed Surgeon to Out-patients, the Melbourne Hospital, Victoria, Australia.

TAYLOR, H., M.B. Lond., M.R.C.S., has been appointed House Surgeon to the North Cambridgeshire Hospital.

THOMAS, P. M., M.D. Cleveland, has been appointed Medical Officer for the Conwyl Sanitary District of the Carmarthen Union.

THOMSON, ST. CLAIR, M.D., F.R.C.S., has been appointed an Assistant Surgeon to the Royal Ear Hospital, Frith-street, Soho-square.

THRESH, J. C., M.B., B.S. Univ. Vict., D.P.H. Camb., has been appointed Medical Officer of Health for the County of Essex.

WATKINS, J. W., M.D. Edin., M.R.C.S., has been reappointed Medical Officer of Health for the Newton-in-Makerfield Urban District.

WILKIN, R. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Fifth Sanitary District of the Risbridge Union.

WILLIAMS, J., M.D., L.M. Edin., M.R.C.S. Eng., has been appointed Physician to the Melbourne Hospital, Victoria, Australia.

WILSON, J. H., M.D., B.S. Durh., has been appointed Medical Officer for the Standish Sanitary District of the Wigan Union.

WINN, JOHN, L.R.C.P., L.M., L.R.C.S. Irel., has been appointed Medical Officer of Health for Clayton-le-Fylde.

WORSLEY, H., M.R.C.S., has been appointed Medical Officer of Health for the Church Urban Sanitary District, vice Loynd.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, 77, Gloucester-street, S.W.—Surgeon to out-patients.

BOROUGH OF SCARBOROUGH.—Medical Officer of Health for the District of the Borough for one year. Salary for first year £325, for the second year £350, and for the third and each following year £375. The Officer will also be required to act as Public Analyst at a further salary of £25 per annum. Applications to the Town Clerk, Town Hall, Scarborough.

BRISTOL EYE HOSPITAL, Lower Maudlin-street.—Third Honorary Assistant Surgeon.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY, Chesterfield.—Junior House Surgeon and Dispenser for three years. Salary £50 per annum, with board, apartments, and laundress.

EAST RIDING LUNATIC ASYLUM, Beverley.—Assistant Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and washing.

EAST SUSSEX COUNTY COUNCIL.—Consulting Medical Officer for one year. Honorarium of 100 guineas and travelling expenses.

GUEST HOSPITAL, Dudley.—Resident Assistant House Surgeon for six months. Board, lodging, and washing in the hospital provided.

LIVERPOOL STANLEY HOSPITAL.—Senior House Surgeon. Salary £80 per annum, with board, &c. Also Junior House Surgeon. Salary £70 per annum, with board, &c.

LONDON HOSPITAL, Whitechapel, E.—Medical Electrician.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer, unmarried, at the Western Hospital for Fever patients, Seagrave-road, Fulham, S.W. Salary £160 per annum for the first year, £180 for the second year, and £200 for the third and subsequent years of service, with board, lodging, attendance, and washing. Applications to the Clerk to the Board, Norfolk House, Norfolk-street, Strand, W.C.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer and Assistant Resident Medical Officer for six months. Salary at the rate of £50 per annum for the senior post.

NOTTINGHAM GENERAL DISPENSARY.—Junior Assistant Resident Surgeon for six months. Salary at the rate of £120 per annum, with rooms, fire, and light.

OLDHAM INFIRMARY.—Junior House Surgeon. Salary £50 per annum, with board and residence.

ROYAL BERKS HOSPITAL, Reading.—Consulting Dentist.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Resident Medical Officer for six months. Salary at the rate of £100 per annum, with furnished apartments and board.

ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields, Bloomfield-street, E.C.—Assistant Surgeon.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—Assistant House Surgeon for six months. Board and residence provided, and an honorarium of £10.

STOURBRIDGE DISPENSARY.—House Surgeon and Secretary. Salary £120 a year, increasing £5 a year to £130, with furnished rooms, coal and gas, and an extra allowance of £25 for travelling expenses. Applications to the Hon. Sec., The Firs, Norton, Stourbridge.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, W.—Assistant Resident Medical Officer for six months. Salary at the rate of £50 per annum, with furnished apartments, attendance, coal, and light.

THE RURAL DISTRICTS OF BUNTINGFORD, HADHAM, HERTFORD, STANSTED, AND WARE, AND THE URBAN DISTRICTS OF BISHOP'S STORTFORD, HERTFORD, HODDESDEN, AND WARE.—Medical Officer of Health for the above districts. Salary £600 per annum, including travelling and all other expenses. Applications to the Clerk of the Joint Committee, Council Offices, Baldock-street, Ware, Herts.

WOOLWICH UNION.—Dispenser of Medicines at the Woolwich Dispensary. Salary £90 per annum, with unfurnished apartments, gas, water, and coal. Application to the Clerk, Union Offices, Woolwich.

Births, Marriages and Deaths.

BIRTHS.

BARTON.—On Oct. 3rd, at Cloghan Castle, Banagher, King's County, the wife of James Kingston Barton, M.R.C.P. Lond., of Courtfield-road S.W., of a son.

BREESE.—On Oct. 8th, at Kennington Park-road, the wife of F. Breese, L.D.S. Eng., of a son.

BRYDEN.—On Oct. 5th, at Harmer-street, Milton-next-Gravesend, the wife of Richard J. Bryden, M.R.C.S. Eng., L.S.A. Lond., of a son.

BULLOCK.—On Oct. 3rd, at Ladbroke-grove, London, W., the wife of J. Ernest Bullock, M.D. Brux., of a daughter.

DOUGLAS.—On Sept. 20th, at Sanchez, Santo Domingo, the wife of Robert Douglas, M.B., C.M., of a son.

FITCH.—On Oct. 4th, at Church Gate House, Chaddesley Corbett, Kidderminster, the wife of Dennis Fitch, M.R.C.S., of a daughter.

HUDSON.—On Oct. 6th., at Vine House, Cobham, Surrey, the wife of Arthur B. Hudson, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

JONES.—On Sept. 14, at Shahjehanpur, India, the wife of Surgeon-Major J. M. Jones, A.M.S., of a son.

LANGFORD-JONES.—On the 6th ult., at Tan-y-graig, Bangor, the wife of Alderman R. Langford-Jones, M.R.C.S. Lond., Mayor of Bangor, of a daughter.

MICHAEL.—On Oct. 1st, at Harold-terrace, Dover, the wife of Surgeon-Major H. J. Michael, Army Medical Staff, of a daughter.

MARRIAGES.

ATTLEE—STUART.—On Oct. 9th, at St. Saviour's, Clapham, by the Rev. H. Hughes, assisted by the Rev. D. H. Davys, John Attlee, M.D. Cantab., of 58, Brook-street, W., son of John Attlee, of Rose Hill, Dorking, to Edith Mary, elder daughter of John Stuart, of "The Hollies," Clapham Common, and of Stonehurst, Ardingly, Sussex.

BENNETT—GWYNNE.—On Oct. 5th, at St. Paul's Church, Avenue-road, N.W., Arthur George Bennett, M.R.C.S., L.R.C.P. Lond., third son of the Rev. J. W. Bennett, M.A., Vicar of St. Paul's, to Agnes, eldest daughter of the late Henry Anderson Gwynne, of Hanwell, Middlesex.

CAMPBELL—HEDLEY.—On Oct. 1st, at St. Peter's Notting-hill, W., Surgeon-Lieutenant John Hay Campbell, M.R.C.S., L.R.C.P., Army Medical Staff, youngest son of the late Major-General Thos. Hay Campbell, R.A., to Clara Edith Hedley, third daughter of the late James Hedley, Esq., Richmond, near York.

JACKSON—FLETCHER.—On Oct. 2nd, at the old parish church, Hampstead, John Archibald Jackson, M.D. Glasg., L.S.Sc., of Carntyne, Hexham, to Florence Mary, eldest daughter of Thos. Gerrard Fletcher, of Ash Mount, Hampstead.

RING—KEMPTON.—On Oct. 2nd, at the Parish Church, St. Peter's, Broadstairs, John Ring., M.D. St. And., of Kilburn, to Alice Caroline, only surviving child of the late Henry J. R. Kempton, of Kilburn, and Cavendish-place, W.

WILKS—KITTO.—On Oct. 3rd, at St. George's Bloomsbury, Joseph Henry Wilks, M.A., M.B. Cantab., eldest son of Edward John Wilks, of Rutland Park, Sheffield, to Amy Kate Margaret, second daughter of the late Richard Luke Middleton Kitto, of Preston Lodge, Prestonpans.

WOOD—MOTUM.—On Oct. 1st, at S. James's Church, Benwell, Charles R. Wood, M.A., M.B., B.S., M.R.C.S., L.R.C.P., second son of W. O. Wood, of South Hetton, Sunderland, to Amy, second daughter of Hill Motum, of Scawby House, Newcastle-on-Tyne.

DEATHS.

ARGLES.—Oct. 8th, at Budleigh Salterton, Julia Catherine, the dearly loved and loving wife of Frank Argles, Wanstead. Friends will please accept this, the only intimation. No flowers, by request.

THOMSON.—At Johannesburg, South Africa, William Sinclair Thomson, M.D., formerly of Palace-court, London, aged 50. (By cablegram.)

WILLIAMS.—On Oct. 3rd, at his father's residence, the Chalet, Portinscale-road, Putney, Alfred John Williams, M.R.C.S., L.R.C.P. Lond., of West-hill, Wandsworth.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 10th, 1895.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb	Wet Bulb	Solar Radia in Vacuo	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 9.30 A.M.
Oct.	4	29·36	W.	53	50	101	61	48	0·16	Cloudy
,,	5	29·80	S.W.	51	49	87	61	43	0·11	Cloudy
,,	6	29·69	W.	56	56	66	59	51	1·49	Raining
,,	7	29·74	W.	50	49	101	61	46	0·08	Fine
,,	8	29·35	S.	54	53	74	56	50	0·15	Raining
,,	9	29·07	N.	54	53	70	56	52	0·35	Overcast
,,	10	29·60	N.W.	50	48	66	52	46	0·03	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.).

TUESDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1.30 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY.—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.).

THURSDAY.—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (2 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.).

FRIDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.).

SATURDAY.—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY.—MEDICAL SOCIETY OF LONDON.—8 P.M. General Meeting. 8.30 P.M. Ordinary Meeting. Opening Address by the President (Sir J. Crichton-Browne): The Generalisation of Specialism.—Mr. C. B. Lockwood: The Operation for the Radical Cure of Hydrocele by Excision of the Sac (illustrated with a series of cases).

TUESDAY.—PATHOLOGICAL SOCIETY OF LONDON.—Papers:—Dr. Ord and Dr. Plowright: Spontaneous Disruption of Calculi.—Mr. D'Arcy Power: Primary Sarcoma of Vagina of Child.—Dr. Wm. Collier: Multiple Polypi of Stomach and Intestines.—Mr. Jackson Clarke: Tertiary Syphilitic Lesions in Lymphatic Glands.—Dr. Herbert Snow: The Non-existence of Round-celled Sarcoma as a Distinct Class of New Growth. Card Specimens:—Dr. Kanthack: (1) Dissecting Aneurysm; (2) Cylindroma of Large Intestine; (3) Diffuse Primary Sarcoma of Liver.—Mr. Targett: Old Injury of Humerus from an Egyptian Mummy.

WEDNESDAY.—NORTH-WEST LONDON CLINICAL SOCIETY.—8.30 P.M. Clinical Meeting.

ROYAL MICROSCOPICAL SOCIETY (20, Hanover-sq., W.).—8 P.M. Prof. J. B. Farmer: On the Division of the Chromosomes in the First Mitosis of the Pollen-Mother-Cell of Lilium.—Mr. G. Massel: New and Critical Fungi.—Mr. F. J. Reid: A Fluorescent Bacillus.

THURSDAY.—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—Card Specimens at 8 P.M.:—Mr. Ernest Clarke: (1) Rare Form of Nystagmus; (2) Orbital Tumour.—Dr. Mott and Mr. Treacher Collins: Case of Exophthalmos associated with Trigeminal Hemianalgesia.—Mr. Lawford: Retinitis Circinata. 8.30 P.M. Introductory Address by the President. Papers:—Mr. Treacher Collins: Four cases of Bilateral Glioma of the Retina cured by Enucleation of both Eyes.—Mr. Devereux Marshall: Detachment of the Choroid.—Mr. Kenneth Scott: Keratitis occurring in Leprosy.

HARVEIAN SOCIETY.—8.30 P.M. Dr. E. Symes Thompson: On the Climate of Egypt.

FRIDAY.—BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION. Cases by Dr. Geo. Stoker, Dr. Ed. Law, Dr. Wm. Hill, and Dr. Dundas Grant. Paper by Mr. R. Lake on a case of Keratosis Obturans. Discussion on the Treatment of Ménière's Symptoms. President's Inaugural Address.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY.—LONDON POST-GRADUATE COURSE.—London Throat Hospital, Great Portland-street, W., 8 P.M., Dr. E. Law: Examination of the Throat and Nose

TUESDAY.—LONDON POST-GRADUATE COURSE.—Bethlem Hospital, 2 P.M., Dr. Craig: Melancholia.

WEDNESDAY.—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3 P.M. Lecture by Dr. Beevor.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—5 P.M. Dr. Morgan Dockrell: Eczema.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Abraham: Dermatological Cases.

THURSDAY.—LONDON POST-GRADUATE COURSE.—Hospital for Sick Children, Gt. Ormond-st., 3.30 P.M., Mr. C. A. Ballance: Selected Surgical Cases—National Hospital for the Paralysed, Bloomsbury, 2 P.M., Dr. Ormerod: Ataxia.—Central London Sick Asylum, Cleveland-st., W., 5.30 P.M., Dr. Patrick Manson: Sprue.

FRIDAY.—LONDON POST-GRADUATE COURSE.—Bacteriological Laboratory, King's College, 3 to 5 P.M., Prof. Crookshank: Examination of Air, Soil, and Water.

SATURDAY.—LONDON POST-GRADUATE COURSE.—Bethlem Hospital, 11 A.M., Dr. Percy Smith: Hypochondriasis.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-sq., W.C.).—5 P.M. Dr. Morgan Dockrell: Diseases of Sebaceous Glands.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

THE HYGIENIC ASPECT OF WOOD PAVEMENT.

M.R.C.S.—If our correspondent will refer to THE LANCET for Aug. 24th, 1895, p. 474, he will find a report of Mr. Wynter Blyth concerned with the question he asks. From this it would appear that asphalte is the most satisfactory form of paving from a health point of view. Wood pavement undoubtedly does get saturated with ammoniacal products, and gives off offensive smells in hot weather, but we do not think that it is worse in this respect than macadam, which is the other alternative to asphalte.

W. J.—There is much variety in the scale of payment of locum-tenents. They are certainly of very variable value. Some are very dear at three guineas a week, and some are worth five. Much, too, depends on the value of the work which they have to do. The fee to be charged by a principal for his assistant sent to be in the house of a patient night and day must be determined by the principal himself, after reckoning the inconvenience and cost he has sustained and the extra remuneration due to the assistant for such unusual work.

Bene.—We consider it decidedly a breach of professional ethics for a medical man to let his rooms to an unregistered dentist and to refer patients to him.

"PRACTICE IN SOUTH AFRICA."

To the Editors of THE LANCET.

SIRS,—Will any of your readers kindly advise a medical man as to the drugs, clothing, &c., to take to South Africa? and also any other information will be appreciated.—I am, Sirs, yours faithfully,

Oct. 9th, 1895. SURGEON.

*** Our correspondent is referred to THE LANCET, Oct. 5th, 1895, p. 896, where, in a letter signed "M. D.," he will find a large amount of useful information as to the questions he asks. With regard to clothing, South Africa is a large district and varies in climate in different parts so that we can hardly advise on this matter without a little more detailed information as to what part our correspondent is going to.—ED. L.

C. B. (Darton).—There is no usual custom. The delay in payment is not, in all probability, the clerk's fault, for he is only the paid servant, and the date of disbursements may be regulated by the date at which his accounts are audited—a date not under his own control. This, at any rate, was the explanation received by another correspondent who made a similar complaint to us. But the fact that the clerk cannot pay does not excuse the want of courtesy in withholding an answer, and our correspondent is advised to write to the chairman directly, and ask that his communication may be attended to.

Dr. Yarrow's communication will receive attention.

IMAGINATION.

A PROVINCIAL journal lately had an account of an inquest upon a child who died in a parish in Norfolk. The report stated that the child died on her return from school, a doctor having been sent for, that a post-mortem examination was made, and a *whole apple* discovered in the child's stomach. Apples, of course, vary in size as much as lumps of chalk, but still we fancy no child could swallow a whole apple unless he or she had a distensible head like a snake. But the facts are as follows: The child was taken ill on a Wednesday and died on the Thursday, no medical man having been sent for. At the post-mortem some pieces of egg, bread, and fragments of apples were found. The cause of death was diarrhœa, a complaint which has been very prevalent of late in the district. We are sorry to spoil a good story, but the fervid imagination of the lay reporter is apt to lead him astray.

Octogenarian.—The connexion between prurigo, a not uncommon source of trouble to persons of advanced age, and emotional or mental trouble is very well known, and continued mental depression would certainly render the neurosis more obstinate to treatment.

Miniern.—We do not, under the circumstances detailed, consider the charge exorbitant.

DROWNING FOLK-LORE.

To the Editors of THE LANCET.

SIRS,—Replying to your correspondent's query in THE LANCET of Oct. 5th, 1895, I beg to say that by searching the up-to-date indices of *Notes and Queries* "Teignmouth" will find a mass of references and information. Sir Walter Scott, Sir Thomas Brown, Miss Braddon (in her novel "Joshua Haggard"), Tylor ("Primitive Culture," vol. i., pp. 97-100), and Edgar Allan Poe ("Essays of Mystery and Imagination") also have referred to this subject. The most damaging and dangerous are the cruel superstitions *re* (1) the bad luck supposed to follow those who rescue the drowning or touch drowned corpses; (2) the landing of, or throwing up of, drowned corpses upon banks, piers, &c., absurdly alleged to injure the local fisheries by frightening the fish away from the district; (3) the ridiculous belief that the rescuer of the drowning is afterwards legally bound to maintain the person or persons whom he has rescued from the waters; and (4) various other superstitions which tend to frighten and hinder the ignorant from attempting to rescue the drowning.—I am, Sirs, yours truly,

Brighton, Oct. 5th, 1895. J. LAWRENCE-HAMILTON, M.R.C.S.

To the Editors of THE LANCET.

SIRS,—In answer to "Teignmouth's" query as to the position of the drowned bodies of the different sexes, I can assure him that the belief is held widely in nautical circles. I have confirmed it in my own experience on more than one occasion. Sailors explain the male position from the relaxed limbs, and the female from the larger mammæ and more prominent abdomen reducing the specific gravity, the larger and heavier thighs and buttocks placing the centre of gravity more posteriorly. This is, I think, reasonable, but I also believe the shape of the female thorax to be an important factor.

I am, Sirs, yours faithfully,

Harrogate, Oct. 5th, 1895. V. BATESON.

To the Editors of THE LANCET.

SIRS,—"Teignmouth" will find the following passage in Dixon Mann's "Forensic Medicine," pages 53 and 54: "Dead bodies usually float with the head and extremities below the water level; the bodies of men in the prone posture, those of women—on account of the adipose tissue of the breasts and abdomen—in the recumbent posture. In the one case the back, and in the other the abdomen, is at or above the water level."

I am, Sirs, yours truly,

Oct. 5th, 1895. F. A.

To the Editors of THE LANCET.

SIRS,—In answer to "Teignmouth" I venture to suggest that the bodies of drowned women float face upwards because of the buoyant adipose tissue of the mammary region. May not the face downward position be determined in men by their predominant supply of gluteal fat?

I am, Sirs, yours faithfully,

Wilton, Wilts, Oct. 5th, 1895. WM. WOODWARD.

I. C.—1. The fact that our correspondent actually was in charge of the practice for a period is proof that an arrangement of some sort was made, and therefore payment of some sort would be due for service done, unless that arrangement was broken through by the employé.—2. We do not think that "usual custom" is sufficiently strong in this case to make our correspondent consider himself entitled legally to any particular rate of payment, but the sum he has mentioned is a fair one.—3. We cannot give the desired definition; but it does not appear to us that any slight upon the social position of the locum-tenent was intended by the employer. We conceive the practitioner's attitude to be based on the idea that as the locum-tenent threw up his position his employer was absolved of all liability towards him. This is not quite tenable from the statement placed before us; but anything more decided than that cannot be laid down from facts supplied by one side only. Cannot a mutual friend or the agent who introduced the parties to each other be constituted amicable arbitrator?

Ballinafeigh.—We do not see that the evidence was required.

SNAKE VENOM AND ITS ANTIDOTE.

APROPOS of this subject and of the experiments of Professors Calmette and Fraser, a correspondent calls attention to the fact that one of the first communications, if not the first, published on the subject appeared in THE LANCET in 1884—Feb. 23rd and March 8th, pages 371 and 456 respectively—from a correspondent writing under the *nom de plume* of "Incognito."

J. L. A. H.—We agree with our correspondent. The subject is one upon which we have often spoken, and shall continue to speak.

Mr. Chas. H. Callanan's communication is receiving our attention.

Mr. Robert Martin is thanked for his letter.

A FEMALE MEMBER OF THE ARMY MEDICAL STAFF.

To the Editors of THE LANCET.

SIRS,—There is a tradition to which I have seen an occasional reference in English books that there was, one or two generations ago, in the British Army, a medical officer who attained high rank as such, and who was found to be, post mortem, of the female sex. The name ascribed to this person in the references which have fallen under my eye is sometimes James Barry, sometimes —— Macleod. Will you please inform me whether this story rests upon any credible foundation or is the mere figment of an idle brain?

Your obedient servant,

GEORGE A. BRIGHT, M.D., U.S. Navy.

U.S. Naval Hospital, Washington, D.C., Sept. 30th, 1895.

*** We can recall the following instances of concealment of sex in the Services—first, that of Mary Anne Talbot, the female sailor, and she did not belong to the medical department. She was, indeed, a very disreputable though courageous adventuress, and fought as a soldier under the Duke of York in Flanders, and as a sailor under Earl Howe of June 1st memory. She was an inmate at different times of Haslar Hospital and two or three metropolitan hospitals without revealing her sex. Then there was Christiana Davis (born 1667, died 1739), who fought in the Marlborough wars. She was wounded and in hospital several times without her sex being discovered. Mary Read and Ann Bonney fought as pirates about 170 years ago, and though their exploits may be mythical their real existence is undoubted. Probably some of our readers can inform us and our correspondent with certainty about James Barry. We have read many allusions to her, but none in any reliable quarter.—ED. L.

A QUERY.

To the Editors of THE LANCET.

SIRS,—Where can I see carried out or obtain the best information on the following subjects: (1) massage, (2) medical electricity, and (3) the Weir Mitchell treatment? I am, Sirs, yours truly,

Oct. 7th, 1895. POST-GRADUATE.

*** Our correspondent will obtain the information he seeks in the following works:—1. "Massage," by Dr. J. Symons Eccles.—2. "Medical Electricity," by Dr. Lewis Jones.—3. "Fat and Blood," by Dr. Weir Mitchell.—ED. L.

"HOMES FOR CHRONIC MELANCHOLIACS."

To the Editors of THE LANCET.

SIRS,—In reply to G. P.'s letter in THE LANCET of Oct. 5th, I think he will find what he requires at the Home for Invalid Ladies, Burntwood-lane, Tooting, S.W.—I am, Sirs, yours faithfully,

Sydenham, Oct. 8th, 1895. G. FORBES GAITSKELL, M.R.C.S.E., &c.

ERRATUM.—In the annotation headed "Deaths under Chloroform" in our issue of last week occur the words, "The chloroform was administered by the medical superintendent" (of the St. Saviour's Union Infirmary, East Dulwich). Dr. Elwin Hunt, the medical superintendent, writes to us that he was away for his holiday, so could not have administered the anæsthetic.

During the week marked copies of the following newspapers have been received:—*Manchester Guardian, Galloway Gazette, Ayrshire Post, Midland Free Press, Daily Chronicle, Scotsman, Times of India, Folkestone Express, Cheshire Observer, Liverpool Courier, Birmingham Gazette, Pioneer Mail, Yorkshire Herald, Glasgow Evening News, Newcastle Daily Leader, Brighton Gazette, Builder, Western Express, Architect, Yorkshire Post, Sanitary Record, Bristol Mercury, Durham City Advertiser, Liverpool Daily Post, Hampshire Herald, Leeds Mercury, Weekly Mercury (Plymouth), North British Advertiser, New Zealand Times, Liverpool Journal of Commerce, Local Government Chronicle, Hertfordshire Mercury, Mining Journal, Weekly Free Press and Aberdeen Herald, Reading Mercury, City Press, Coventry Herald, Weekly Dispatch, Surrey Advertiser, Cape Times, Glasgow Herald, Kendal Mercury, Elgin Courant, West Middlesex Standard, Citizen, Eastern Morning News, The Realm, Indian Daily News, Oswestry Advertiser, Batley Reporter, Fife Free Press, Hampshire Advertiser, Loughton Monitor, Australian Medical Journal, Derbyshire Times, Eastern Daily Press, Science Siftings, Shrewsbury Chronicle, Essex County Standard, &c., &c.*

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Y.—Dr. G. Yarrow, Lond.; Messrs. Younger and Younger, Glasgow.

Z.—Z. Y. X., Lond.; Z., Lond.

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First Page (under Contents) when space available		
(Books only) Five Lines and under	0	5 6
Every additional Line	0	1 6
Quarter Page	1	10 0
Half a Page	2	15 0
An Entire Page	5	5 0

Terms for Position Pages and Serial Insertions on application.

NOTICE.—Advertisers are requested to observe that it is contrary to the Postal Regulations to receive at Post Offices letters addressed to fictitious names or initials only.

An original and novel feature of "THE LANCET General Advertiser" is a special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice, but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials &c. sent to the Office in reply to advertisements; copies only should be forwarded.

Terms for Serial Insertions may be obtained of the Manager, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 8, Rue Traversière, Asnières, Paris.